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# The Journal of the American Medical Association

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## REHABILITATION OF THE DISABLED*


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WASHINGTON, D. C.


### I. REHABILITATION OF THE WAR DISABLED

The world war has aroused a universal interest in the physical and mental rehabilitation of disabled soldiers. The instruments of destruction of modern warfare sacrificed millions of lives and disabled a multitude of men. To conserve man power it became necessary for the European countries engaged in the war to study and apply all possible measures to protect the lives and health of the soldier. The use by the central powers of offensive and destructive measures in the way of high explosives, poisonous gases, liquid fire and other devices produced injuries requiring special measures of prevention and efficient surgical and medical management which could be developed only after careful research and study.

The final year of the war was illuminated by remarkable results of the practical application of known and new measures of prevention of disease, and military surgery reached a stage of technical skill and efficiency heretofore unknown.

#### EUROPEAN METHODS OF REHABILITATION

In addition to ordinary medical and surgical care, all the European countries engaged in the war adopted measures to hasten physical and functional restoration by the application of special therapeutic measures grouped under the heading of physical and mental reconstruction or rehabilitation.

The program of rehabilitation included physiotherapy, embracing hydrotherapy, electrotherapy and thermotherapy; exercise, passive (massage, mechanotherapy) and active (graduated calisthenics and special training, military drill and games in the gymnasium and out of doors); and occupational therapy in the application of manual and mental training and education in wards, workshops and schools and in gardens and fields. For the soldiers still fit for combat or for special military service, convalescent training centers were maintained, where, by means of military drill, instruction in individual and general hygiene, and play, the final hardening and restoration were completed.

All of the Allied countries of Europe together with Canada endeavored to train and educate the soldiers who were so disabled by disease or injury that they were no longer fit for any kind of military service, to qualify them to serve in the civilian industrial army. The rehabilitation program of these countries was carried on through a plan of cooperation of the military and civilian authorities. Limited time and space do not permit one to give here details of the program and the results of rehabilitation of the disabled as practiced by the Allied countries associated with us in the war.

Fig. 1.—Application of thermotherapy.

#### AMERICAN PROGRAM

The United States became engaged in the war so late that our government was able to take advantage of the knowledge acquired by the entente governments by a bitter experience in defensive and offensive warfare, in measures of protection and prevention of injury and death. The Medical Department of our Army shared in the opportunity to apply the newer military medicine and surgery in the prevention and treatment of disease and injury. The program of our government for the care of the soldier and his dependents embraced:

1. The creation of the Bureau of War Risk Insurance, in the Treasury Department, with provisions for voluntary life insurance with the payment of a monthly premium of moderate amount from the soldier's pay;

* Read before the Institute of Medicine of Chicago, April 19, 1919.
* This article is abbreviated by the omission of some of the illustrations. These appear in the author's reprints.

provision for monthly allotment to the soldier's dependent family and provision for the payment of a monthly pension after discharge for a permanent disability acquired in the line of duty.

2. The Medical Department of the Army was authorized by the War Department to include measures of physical reconstruction in the treatment of the sick

Fig. 2.—Ward class in academic study.

and wounded soldiers, including the employment of curative work carried to the degree of prevocational or vocational training and education, to fit them for further general or special military service; or if unfit for further military service to discharge them from the Army after the maximum physical and functional result was obtained.

3. The Congress enacted a law approved by the President, June 27, 1918, which made the Federal Board for Vocational Education responsible for the vocational training and education of compensable disabled soldiers after their discharge from the Army.

4. The Congress has provided appropriations and has made the Public Health Service responsible for the hospital care of compensable disabled soldiers who may require treatment after their discharge from the Army.

The policy adopted by the Medical Department of the Army, in the attempt to fulfil its obligations to the government and the soldier, embraced a program of measures of prevention and treatment of disease and injuries, including mental and physical reconstruction or rehabilitation, based on accumulated experience and knowledge.

Advantage was taken of all available knowledge gained by the medical departments of the armies and governmental and other agencies of our Allies. American officers and American hospital units served with the English and French armies before we had developed an army overseas. Hundreds of these medical officers, medical enlisted personnel and American nurses acquired a first-hand knowledge of modern military medicine and surgery, enabling them to give efficient service in our own Army overseas and at home.

### ORGANIZATION OF ARMY MEDICAL DEPARTMENT

One of the remarkable developments of the war was the organization of the Medical Department of the Army. Our country was unprepared for war on April 6, 1917. Our Regular Army establishment was efficient but small. The regular Medical Corps numbered less than 500 commissioned officers. As a rule they are a fine and upstanding body of men, many of them well qualified for administrative duty and as surgeons and physicians, a few with world wide reputation in research work and as sanitarians. At the call of the Surgeon-General the medical profession responded by volunteering for service. The large majority of these men were untrained in military tactics and knew but little of military medicine. But among them were many of the best qualified physicians, surgeons and specialists of our country. The majority quickly overcame the handicap of lack of pure military knowledge and gave service at home and overseas which evoked the praise of the chief commander of the American Expeditionary Forces and of the Surgeon-General. Nor must one lose sight of the spontaneous response of the medical profession to the call of the Provost Marshal-General for service on draft boards, and of the efficient manner in which this service was rendered.

### DISEASE AND INJURY PREVENTION

The subject of rehabilitation of the disabled soldier involves the application of measures of disease and injury prevention. The principles involved in the problem of disease and injury prevention as applied to our army were made more difficult by many factors. Men were inducted into military service before the training camps were completed; it was practically impossible to place nonimmune suspects in detention quarters for a sufficient period of observation, and infectious disease carriers thus spread measles, scarlet fever and cerebrospinal meningitis among the susceptible troops. The winter of 1917-1918 was characterized by severe cold and much snow, and the newly organized Medical Corps officers were insufficient in number and many were inexperienced at the beginning in how best to deal effectively with the big and difficult problems. In the late summer and fall of 1918 the world wide severe epidemic of influenza reaped an abundant harvest of lives of soldiers and civilians. A malignant

Fig. 3.—Telegraphy in bed.

type of pneumonia characteristic of all epidemics of influenza was the chief cause of death. To all of these embarrassments in the application of measures of disease and injury prevention must be added the risk of the transportation of a large army in dense concentration by train in the United States and in France, England and Italy, and in equally crowded ships across the ocean. When overseas the soldiers met a trying

climate, more or less uncontrollable insanitary environment of villages where they were billeted, or still worse conditions in the trenches or when advancing and living for days and weeks in a territory occupied by the armies of friend and foe for four years, the soil foul and infected; and finally they had to face a murderous, vicious foe who utilized every destructive element known to science and the devil to kill, wound or maim the opposing army.

But with all these embarrassments, difficulties and universal disability producing causes, the program of disease and injury prevention, and the medical and surgical management of our sick and injured soldiers was carried out by the Medical Department of the Army in a manner so successful that it justified the praise given by the chief commander of the American Expeditionary Forces and of the War Department.

In the making of our Army we selected the best of our young men from a physical point of view. Every man was immunized as a protection against smallpox, typhoid and paratyphoid fevers by standardized vaccines. Adequate clothing and blankets gave protection to the body. The American military shoe, the product of a research made by a regular Medical Corps officer, made him the best shod man of any army. Military drill and special training, discipline, life in the open, an abundant balanced ration and regular hours soon made an army of upstanding and physically fit men ready for any job. These new soldiers seemed to embody and demonstrate the spirit of patriotism of the nation. Physically and spiritually they had taken over new resistance to disease or injury. These same qualities made them bear disaster, when it fell, with courage and stoicism rarely seen in other men.

Overseas, special centers provided facilities for the correction of defects which were remediable by special training under qualified specialists and put the finishing touch on all. Prevention of combat injury was difficult at all stages of the war, owing to the nature of the weapons and destructive elements utilized by the enemy. Metal helmets and gas masks afforded some protection, but never wholly adequate.

During the last year of the war many lives were saved and in many cases permanent disability was obviated by the employment of efficient medical and surgical care. This modern military medicine and surgery was the outgrowth of the combined experience of the medical departments of the armies of the Allies and the United States, including cooperative research and clinical conferences.

### FIRST AID

On the field the well trained medical personnel applied first aid and immobilized fractures with standardized splints carried to the field. This obviated further trauma of the tissues by the bone fragments during transportation to the rear. At evacuation hospitals within the combat zone and often subject to artillery fire, operations including the gravest major surgery were performed within a few hours after the injury was received. Unfortunately, in some battles a difficult terrain or in cases in which the battle was marked by fierce fighting and rapid advance, the evacuation of the injured was necessarily delayed. The soil of "no man's land" was always a source of danger of serious infection to the wounded. Nevertheless, the application of the new principles of prevention of additional trauma during evacuation from the field by proper fixation with splints, early and thorough cleansing of the wounds, by the removal of all foreign bodies and of devitalized tissues with open drainage obviated to a great extent gangrene and other serious types of infection, which were such a frequent cause of the loss of life and limb in the first years of the war. This explains the relatively small number of permanent disabilities through the loss of legs or arms of our disabled men. The successful application of lung surgery at evacuation hospitals and the life saving result is one of the remarkable events of the last year of the war.

The remarkable results of the treatment of the patients suffering from so-called "shell shock" is due to the application of the knowledge gained by military clinical experience. If this successful treatment had not been applied, thousands of soldiers would have been discharged suffering from types of mental and nervous disability. In the home environment and under the influence of the desire for a pension, many would become permanent invalids—an enormous loss to the industrial world and a continued financial burden to the government.

Fig. 7.—Curative work applied in the wards in the form of handcrafts.

### STATISTICS AS TO DISEASE AND INJURY

In the discussion of the results of the application of measures of disease and injury prevention, I am permitted to quote available statistics. They are subject to correction after all data shall have been definitely verified. The deaths from typhoid and paratyphoid fevers in the domestic forces from Sept. 1, 1917, to March 28, 1919, were fifty. In the American Expeditionary Forces from Oct. 18, 1917, to March 28, 1919, there were 146, or a total in the U. S. Army of 196. This gives an annual death rate for typhoid and paratyphoid fevers of 0.06 per thousand. The efficient work of draft boards and of medical examining

boards of training camps detected and rejected approximately 50,000 tuberculous men. Pulmonary tuberculosis developed in approximately 11,000 or possibly 12,000 soldiers, of whom 1,036 have died, giving an annual death rate in the whole army of 0.316 per thousand. The total deaths from other infectious diseases were: for meningitis, 2,055, giving a rate of 0.63

Fig. 9.—Curative work in shoeshop.

per thousand; measles, 119, or 0.036 per thousand; scarlet fever, 163, or 0.051 per thousand; dysentery, 41, or 0.001 per thousand; and empyema, 490, or 0.148 per thousand.

The pandemic of influenza complicated with a malignant type of pneumonia was the chief cause of death from disease in the Army at home and overseas. The medical profession, both civil and military, was unable successfully to institute measures of prevention or cure. The total number of deaths in the whole Army from Sept. 1, 1917, to March 28, 1919, was approximately 39,493, which gives an annual death rate of 11.997 per thousand. During the same period of time the total deaths from disease, including pneumonia, was 48,670, with a rate of 14.797 per thousand. The efficiency of the application of measures of disease prevention and of treatment is shown by the total deaths from disease alone, exclusive of pneumonia, which were approximately 9,177, giving an annual rate of 2.80 per thousand.

The efficiency of modern military surgery is evidenced by the official statement that 85.5 per cent. of combat injured soldiers of our Army returned to combat service, and 5 per cent. were made fit for special or limited military duty in the rear areas.

The remaining approximately 10 per cent. of the combat injured were so severely disabled that death occurred or the nature of the disability made them unfit for further military service. These included the blind, the deaf, patients with amputation of limbs, serious maxillofacial injury, serious peripheral nerve injury, empyema from trauma of lung or pleura, and other surgical conditions.

We may be justly proud of the accomplishments of the Medical Department of the United States Army in the world war. Serious mistakes occurred, due often to uncontrollable conditions and situations. The medical program of hospital construction, supplies, equipment, transportation and countless other needs had to be modified or to wait on other parts of the war program of the government. We know that many mistakes occurred, some serious ones, too, in regard to details, but the whole vast program of the government went through. The end sought was obtained much earlier and more satisfactorily than was anticipated. If the big governmental program had been carried through less expeditiously, perhaps fewer mistakes would have been made in all departments. But had we worked with less haste one wonders whether the Allied armies would now be astride the Rhine.

The policy of the Medical Department for the physical reconstruction of disabled soldiers and later extended to disabled sailors and marines, was formulated in August, 1917, applied in some of the general military hospitals early in 1918 and approved by the War Department July 29, 1918. Physical reconstruction was defined as continued management and treatment carried to the fullest degree of maximum physical and functional restoration, consistent with the nature of the disability, by the employment of all known measures of modern medical management, including physical therapy, manual and mental work and recreational play.

To carry out this policy a program was formulated to establish a department of education and a department of physiotherapy in each of the general military hospitals designated by the Surgeon-General to function in the physical reconstruction of disabled soldiers. A division of physical reconstruction in the Surgeon-General's Office was organized, with a director to be responsible for the administration of the work. Subsections on education and on physiotherapy, each with a director, were established in the division.

### PERSONNEL OF EDUCATIONAL DEPARTMENT

To establish the educational department with efficient standards the Surgeon-General was fortunately able to secure the services of Dean James E. Russell of Teachers College, Columbia University, to serve as the administrative director. Dean Russell was unable to accept the place permanently, but volunteered to give

Fig. 10.—General view of woodworking shop.

his services in an advisory capacity for several days of each week in the organization of the educational department. This he did without compensation for the period of five months, when he was obliged to return to his duties at Columbia College. Dean C. D. Coffman of the University of Minnesota occupied a similar position in the office as a volunteer without compensation on the retirement of Dean Russell.

Through the efficient service of these two patriotic men, aided by other qualified general and special educators, who came into service commissioned in the Sanitary Corps of the Medical Department, the Surgeon-General was enabled to establish educational departments and the needed personnel in each of the military hospitals where the work was required. Each hospital was supplied with a chief educational administrative officer, commissioned officers qualified as general and special educators and psychologists and noncommissioned and enlisted men able to serve as teachers and instructors of patients in the application of curative work in the program of physical reconstruction.

The director of physiotherapy in the office was able to secure a sufficient number of qualified medical officers to serve as directors of the work and a personnel of other commissioned officers, noncommissioned and enlisted men and trained qualified women aides in physiotherapy efficiently to apply physical treatment to disabled men.

Recreation in the form of exercise in gymnasiums and out of door games was secured through the American Red Cross cooperating with the Y. M. C. A., the Knights of Columbus, the Jewish Welfare Board and in the base hospitals and convalescent centers through the War Department Training Camp Activities.

### WARD WORK

In the application of the curative workshop schedule, work in the wards for bed and chair patients was applied by women as reconstruction aides in occupational therapy. These women were qualified for the work by experience as teachers in high schools, colleges and universities in civil life and by special training in arts and crafts. Some of them had served in civil life as social welfare workers.

The ward work has proved of the greatest value in the cure of patients. Primarily, application of the work served as a diversion by arousing the interest of the patient and by distracting him from a contemplation of his disabled condition, whether due to sickness or to injury. At the beginning the schedule of ward work consisted of simple handcrafts in the form of knitting, beadwork, basketry, mat-weaving, block stamping, wood-carving and the like. As the work progressed, it was found that the interest of the patient was more readily aroused by work that was prevocational or even vocational in character, because it prepared him for the occupation that he would follow after discharge from the army or for further education and training by the Federal Board of Vocational Education. Consequently stenography, typewriting, mechanical drawing, winding electrical armatures, academic and commercial study and the more purposeful handcrafts were utilized.

As rapidly as possible buildings were altered or new ones constructed for workshops and schools, equipment installed, books were obtained through the American Library Association, and the convalescent patients were sent to the shops and schools for the application of the doses of work prescribed by the ward surgeons.

### SHOP WORK

The schedule of work in the shops consists of motor mechanics, boot and shoe repairing, harness making, carpentry, electrical installation, printing, mechanical drafting and the like. In the gardens, landscaping and truck gardening are taught; on farms, ordinary farming, including stock breeding, dairying, poultry raising, hog raising and farm economics. Greenhouses are utilized at many centers to train men in horticulture and to grow vegetables. In the schools academic studies in common school branches including left hand writing are taught. Incidentally, aliens, and especially the illiterates, are educated and then naturalized as American citizens. Commercial courses are given in shorthand, typewriting, bookkeeping, banking, buying and selling, and many other branches.

### SPEECH DEFECTS

At the U. S. General Hospital No. 11, Cape May, an efficient school for the disabled soldiers with deafness and defective speech successfully teaches lip reading and the correction of speech defect. The patients coincidently receive prevocational or vocational training.

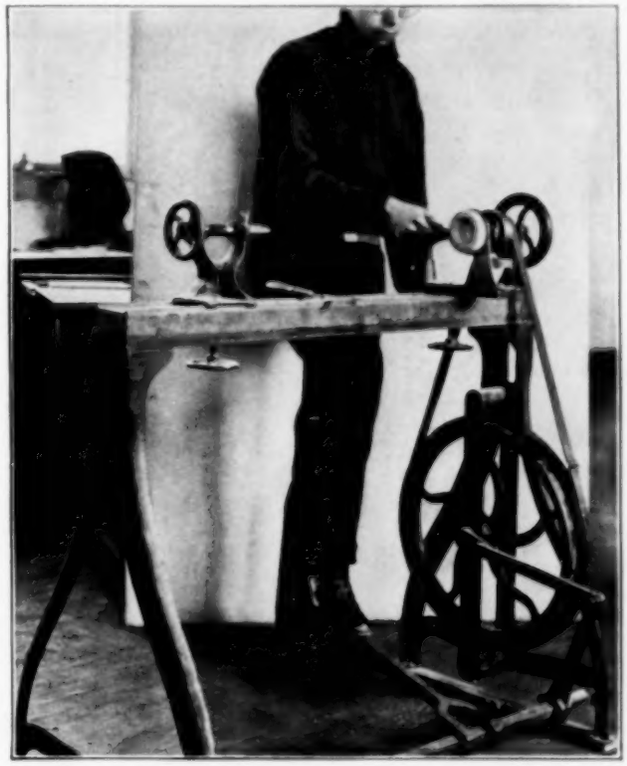

Fig. 11.—Curative work: Application of foot treadle to exercise disabled knee.

### CARE OF THE BLIND

At the U. S. General Hospital No. 7, Roland Park, Baltimore, there has been established a school for the blind or nearly blind soldiers, sailors and marines. The blinded soldier is taught how to dress, feed himself and get about as an independent person, at the same time thorough instruction is given in Braille and coincident training in occupations suitable for the blind. In this connection, there are approximately one hundred totally blind, and approximately one hundred partially blind soldiers, sailors and marines.

### THE TUBERCULOUS

The schedule of curative work applied to the disabled soldier suffering with pulmonary tuberculosis was modified to meet the varying clinical conditions under constant watchful medical supervision. Cura-

tive work for the tuberculous soldier has proved of the greatest value in the prevention of hospitalization and for the convalescent in the production of the final hardening process so valuable in the prevention of relapse, when the stage of inactivity of the disease has been secured.

### SPECIAL CENTERS

A few of the general hospitals have been designated as special centers for the treatment of the nerve injuries, the maxillofacial mutilations, and of the amputation cases. At two or three centers, provisional artificial limbs and protheses are manufactured. There the men with amputations are fitted and trained in the use of the artificial appliances. In this connection it should be stated that the Bureau of War Risk Insurance is responsible for furnishing the discharged soldier with the needed permanent artificial limb.

Fig. 12.—Curative work applied in the act of sawing, to improve the mobility of the elbow.

### COOPERATION

In the application of curative work in the treatment of disabled soldiers it has been the endeavor to secure cooperation between the ward surgeons and the educational department. It has been recognized that the justification of the adoption of work as a therapeutic agent involves control by the surgeon and physician; that while the educational officer may evolve kinds of work, which to accomplish the end sought requires known muscular action, it is the surgeon or physician who must indicate the particular function to be restored and to prescribe the dose of work, the time it is to be given and the frequency of its repetition. The same cooperation is necessary between the clinical staff and the director and his personnel in the application of physiotherapy.

### "CHEER UP" PROPAGANDA

For the information of the disabled soldiers circulars and bulletins have been published by the Medical Department of the Army outlining the program of physical reconstruction in the military hospitals. "Cheer up" propaganda has been placed in the hands of the patients and for their benefit, and, to educate the general public on the need of physical and functional rehabilitation, the Surgeon-General has published and distributed, with the cooperation of the American Red Cross, a magazine *Carry On*.

Cooperating with the Federal Board for Vocational Education, the Surgeon-General has compiled and published courses of study in pamphlet form, covering all phases of study and occupations as guides to teachers and patients, in the application of the curative workshop schedule in the wards, shops, schools, gardens and fields.

To the date of the signing of the armistice the educational activities applied in the treatment of the disabled soldier justified the vocational training of the convalescent soldier to fit him for further special military service. Until that date the general hospitals which functioned in the physical reconstruction of disabled men returned many men to general or special military service, and of these, the majority had been sent to the hospitals, with the belief they could not be made fit for further military duty. The application of curative work, physiotherapy, military drill, special training and play were the decisive factors in securing such complete physical and functional restoration that they were able to return to military duty.

### THE RETURNED DISABLED SOLDIER

Following the signing of the armistice and the cessation of hostilities it was no longer necessary to keep the disabled man in overseas hospital until restored, because he would no longer be needed for the military service unless he had enlisted prior to April 6, 1917. Consequently, it became necessary to amplify the centers in this country for the physical reconstruction of the large number of disabled men from overseas who returned to America for treatment. To meet this need facilities were provided by the War Department at the request of the Medical Department, for physical reconstruction of disabled soldiers in departmental base hospitals and in base hospitals of the National Army cantonments. Additional general hospitals were also equipped for the work until a total of forty-nine hospitals were designated to function in the physical reconstruction of disabled men. In addition to the hospitals, nineteen convalescent centers were established in the training camps of the country to which convalescent detachments from overseas and convalescent patients from the hospitals of this country were distributed, each one sent to the center nearest his home, for a final process of hardening by the application of curative work both manual and mental, by general and special physical training through military drill and calisthenics, and by exercise at play in gymnasia and out of doors.

Since the armistice was signed the policy of the Medical Department of the Army is to discharge the disabled man as soon as he shall have reached the maximum physical and functional restoration, consistent with the nature of the disability. This leaves to the Federal Board for Vocational Education the

responsibility for the occupational training and education which is the privilege of the compensable disabled soldier if he desire to take it. The application of physical reconstruction or a better term, physical and mental rehabilitation of disabled soldiers, has been justified by the result in the military hospitals of this country. With a small beginning it has grown within a year of practical application to a large establishment.

PERSONNEL

The personnel of educational officers with their subordinates, noncommissioned officers, enlisted men, as qualified administrators and instructors are as fine a body of men as one will find anywhere. They have given patriotic and efficient service to the country and have been and are recognized factors in the more complete physical and functional restoration of disabled men, who have thus been made fit to return to their old or a new occupation or have been physically and mentally prepared to take advantage of the opportunity for vocational training and education under the authority of the Federal Board.

Approximately eight hundred reconstruction aides in physiotherapy have given efficient service in the application of local baths, electrotherapy, massage and passive exercise to disabled men at home and overseas.

Approximately fourteen hundred reconstruction aides in occupational therapy have rendered service of the highest efficiency in the application of mental and manual work for the patients in wards in overseas and in domestic hospitals. These women who have served the government as reconstruction aides in

Fig. 13.—Curative work; using carpenter's plane with molded hand grip to exercise disabled hand.

physiotherapy and in occupational therapy are deserving of the highest praise for the work they have done for the disabled men.

It is common expression of all officers who have come in contact with the disabled sick and wounded soldiers that the application of curative work and physiotherapy has done much to improve the morale, maintain discipline, prevent hospitalization and to hasten and make more certain the cure of the patients.

PERMANENT POLICY

It is believed that the experience and application of curative work and standardized physiotherapy in the military hospitals during the emergency created by the

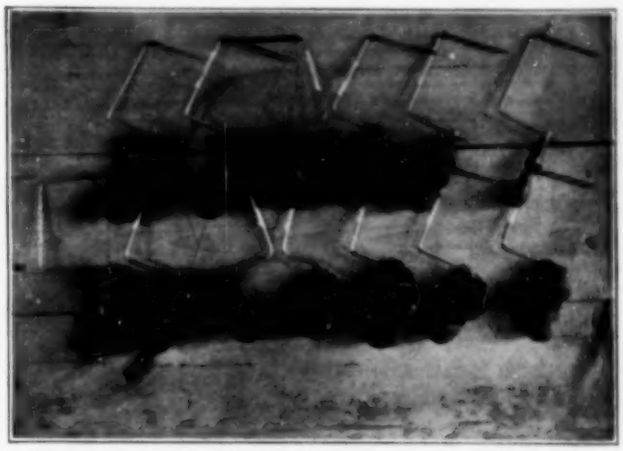

Fig. 14.—Examples of plastic wax handles for jig saws molded to fit individual disabled hands.

war, will become a permanent policy of the military establishment of the United States. This policy will necessitate the designation of certain general and military post hospitals to function in the physical reconstruction of the sick, injured and disabled men. Facilities for this work in military hospitals will include the application of curative work that is vocational in character. Vocational training in the military hospital is justified by law and by the fact that the disabled soldier may continue in military service provided the nature of the disability permits restoration consistent with further service. The vocational training and education received while a patient will make him of greater value as a soldier and at the expiration of his term of enlistment, should he decide to return to civil life, he will serve with greater efficiency in the industrial army.

## II. REHABILITATION OF THE DISABLED OF THE INDUSTRIAL ARMY

It has been stated that 750,000 people of eighteen of the United States of America are injured annually in the industrial occupations. Of these, 35,000 are permanently disabled. It has also been stated that 80,000 people are permanently disabled annually in the whole United States through accident received in industrial occupations. Of these it is stated that 2,000 are totally disabled.

This enormous crippling or entire loss annually of the industrial workers has not received the consideration due these unfortunates by federal, state or local governments, or by corporations engaged in industrial work.

Sporadic attempts have been made by local communities or by corporations to overcome the handicap due to the disability by the application of measures of physical and mental rehabilitation. But, as stated, the attempts have been purely local, small in character as compared with the enormous problem and have been characterized by partial success only because of the

lack of uniform standardization and application of the work.

The application of mental and physical rehabilitation to sick and disabled soldiers by practically all of the nations engaged in the war has proved so successful and beneficial that it imperatively demands the application of like measures for the benefit of the disabled of the army of the industrial world.

The need of the physical and mental rehabilitation of the disabled of the industrial army of the United States has already received the earnest consideration of thoughtful members of the United States Congress, of Federal Department officers, of governors and other officers of some of the states, of the heads of great industrial corporations, of members of the medical profession, and of the workers themselves.

The success of the mental and physical rehabilitation of disabled soldiers under the administration of governmental authorities cooperating with civilian organizations in England, France, Italy, Canada and other countries, and under the War Department of our own government cooperating with the Bureau of War Risk Insurance and the Federal Board for Vocational Education suggests a similar initiation of the mental and physical rehabilitation of the disabled of the industrial army.

Fig. 15.—Practice with artificial appliances in the woodworking shop.

### FEDERAL ATTENTION TO THIS PROBLEM

In this connection it is suggested that the mental and physical rehabilitation of the disabled in civil life should be standardized by federal law. Federal responsibility in the welfare of the people of the country should be a reason for the enactment of federal and state legislation which will establish the compulsory application of measures of prevention of disease and injury and rehabilitation to overcome the handicap of those who, in spite of the application of precautionary measures, are disabled by illness and injury. The responsibility for the efficient and practical application of physical and functional rehabilitation of the disabled should lie with the state, the municipality or other local communities. The cost of the rehabilitation of the disabled should be borne in proper ratio by the federal, state, county and municipal governments and the corporations employing labor.

### MILITARY EXAMINATIONS SHOW NUMBER OF UNFIT

The problem of mental and physical rehabilitation of the civilian population disabled by illness and injury involves primarily the application of known scientific and other practical measures of disease and accident prevention. It is significant of the need of the application of known practical and efficient measures of disease prevention that approximately 50,000 registrants were rejected because of pulmonary tuberculosis by the local draft boards and the military medical examining boards of the training camps. Many of these young men were unaware that they suffered from the disease. The draft boards and the training camp medical officers detected and rejected as unfit for military service approximately 53,000 registrants made defective by acquired or congenital nervous disease or mental deficiency. Other disqualifying conditions due to preventable diseases caused the rejection by draft boards of thousands of our young men.

### DISEASE AND INJURY PREVENTION

The experience resulting from the war emphasizes the need recognized for years by sanitarians and many physicians of the compulsory application of measures of prevention of infectious and other acquired and congenital diseases or morbid conditions. Well known and safe means of immunization will practically banish smallpox, typhoid and paratyphoid fevers. The efficient application of the laws of sanitation will abolish or diminish to a negligible degree malaria, hookworm disease, cholera, bubonic plague, tuberculosis, trachoma, dysentery and other diarrheal diseases which are so productive of temporary or permanent disability. Venereal disease prevention should be enforced by measures which command known medical knowledge and skill reinforced by the police powers of the state. Fortunately, alcoholic misuse and the harmful results to the individual and through him of others, will soon cease to be a national menace. Marriage and birth control are essential measures of prevention of an increasing number of the physically and mentally unfit. Many of these unfortunates are dependent from birth on society for their maintenance or become so because of nonresistance to disease or because they are physically or mentally unable to safeguard themselves from industrial or other injury. Individual hygiene and the prompt treatment of trivial injuries and illnesses and the thorough eradication of foci of infection will usually prevent more serious consequences.

The war has shown us the value of a life in the open with regular hours, directed exercise, a simple dietary and the use of sensible shoes, as measures for developing resistance to disease and the maintenance of healthful vigor. Many industrial corporations have already learned the value of the application of measures of disease and injury prevention. Better sanitary conditions have been established and safety devices adopted which have been of the greatest value to employer and employee. These measures of safety provision should be standardized and universally applied, under a law of compulsion.

### USE OF CIVILIAN HOSPITALS

Rehabilitation of the disabled in civil life should begin in the civilian hospitals just as it has received its primary application to the disabled soldiers in the military hospitals. There is this difference, however; the military hospital is justified in the application of curative work having a vocational trend which will make the soldier of greater value to the army when he shall have recovered.

In the civilian hospital the application of curative work in the treatment of the patients is justified as a curative measure which makes more certain and more rapid the recovery of the patient. Every civilian hospital which serves a large community should maintain a department of physiotherapy properly equipped in which standardized and efficient physical treatment may be given to the sick and disabled who require it. But a civilian hospital cannot become or be maintained as a vocational school or college in the sense of educating and training the sick to better qualify them for an old occupation or to train them for a new one.

Fig. 16.—Disabled soldiers with amputation of leg learning to use artificial limb.

The function of the hospital in the treatment of the sick ceases when the patient has reached the degree of maximum physical and functional restoration. If the patient is permanently disabled by sickness or injury and the handicap due to the permanent disability needs to be overcome by vocational training and education, the convalescent patient should receive this elsewhere than at the hospital.

### INDUSTRIAL TRAINING SCHOOLS

It is my belief that the time has come when industrial training centers with properly equipped shops and schools must be maintained in every great manufacturing and industrial center where the disabled, both temporary and permanent, but especially the latter, may receive the training and education necessary to qualify them to continue in the old jobs or if necessary, to qualify them for new occupations. By cooperation with existing industrial shops and schools this training and education may be carried on without great expense. The opportunities offered should be made available for the convalescent disabled men and women discharged from all hospitals of the community.

This project should receive the financial and moral support of the responsible business heads of the great railroads, great manufacturing interests, public utilities, and all persons able to aid who are interested in the welfare of their fellow men. It should receive the enthusiastic support and cooperation of all industrial workers.

### PENSIONING OF THE DISABLED

Government pensions for permanently disabled soldiers and compensation for industrial accidents are just measures of relief. This money compensation never adequately compensates the injured individual for the disability suffered. The compensation does afford him means which should encourage him to take training necessary to rehabilitate him and to fully overcome the handicap due to the disability.

### CONCLUSION

The government maintains homes for the disabled soldiers. Counties and municipalities maintain hospitals for the free treatment of the poor and almshouses for those no longer able to maintain themselves because of physical disabilities due to serious injury and old age. These homes for dependents are also justified by the need, but if proper measures are applied adequately to rehabilitate, by proper training and education, those disabled by sickness and injury, the large number of dependents of the military and industrial armies, who have in the past and may continue in the future to suffer the prolongation of a relatively useless and unhappy existence in these institutions, will be greatly decreased, if the measures advocated herein are carried out.

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**Flyless and Birdless Towns.**—It is a matter of general comment that the number of flies has materially decreased during the last three years. This is undoubtedly the result of the nation-wide campaign. Some communities excelled in this respect so that certain birds, which chiefly depend on flies for their food, are compelled to move elsewhere. A few more seasons' activities like the past will result in making many communities flyless.—*Buffalo Sanit. Bull.* **12**:170, 1919.

# SOME OBSERVATIONS ON THE SURGICAL TREATMENT OF GONORRHEAL EPIDIDYMITIS

## WITH TECHNIC OF OPERATION

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Owing to the war, with the visible increase of gonorrhea, and to the many opportunities for observing and recording cases in army practice, it has been possible to collect a large number of case records of the various types with their complications. The purpose of this paper is to draw some conclusions from the results obtained by the surgical treatment of gonorrheal epididymitis.

Various writers have placed the incidence of gonorrheal epididymitis at from 10 to 25 per cent. It has been 15 per cent. during the past year at the Canadian Special Military Hospital, Etchinghill.

Cases of epididymitis show a distinctly longer stay in hospital than many other complicated types of gonorrhea. In addition they are a frequent source of relapse of the urethritis, the cause of sterility on the side affected in a very high percentage of cases, and the reason for a great deal of acute pain and discomfort to the patient. The operation of epididymotomy was commenced as a routine measure with a view of shortening the duration of treatment in hospital, of reducing the liability to sterility and of relieving symptoms.

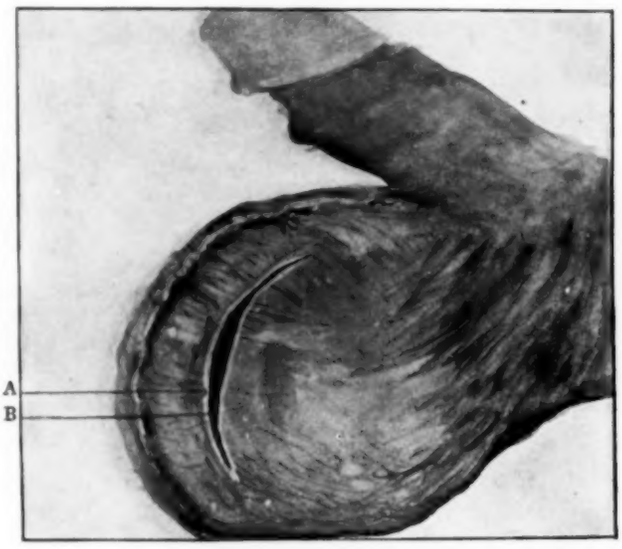


Fig. 1.—Initial incision: *A*, dartos; *B*, cremaster.

I have observed two distinct types of gonorrheal epididymitis; first, the subacute type, coming on slowly, in which the epididymis never becomes much larger than a man's thumb, with only a slight hydrocele and very little edema or redness of the scrotum. In these cases the pain is not acute, and constitutional symptoms are not marked. It is seldom that these cases develop into the second or acute type, in which the onset may be, (*a*) slow, resembling the beginning of the subacute type, but gradually progressing in a few days, with intense pain, marked redness and edema of the scrotum, pain in the cord, radiating into the iliac fossa, accompanied by hydrocele, fever and high leukocyte count; (*b*) rapid, commencing with pain, swelling, edema, fever and hydrocele, progressing to an acute stage within from twenty-four to forty-eight hours. These types are due undoubtedly to the degree of virulence and to the strain of the infecting gonococcus.

There may be three channels of infection: (1) direct extension through the urethra, ejaculatory ducts, vesicles and vas; most observers incline to believe in this method of infection; (2) the lymphatics, which to my mind constitute a more common channel of infection than is generally supposed; (3) the blood stream, which is least likely.

If we consider the pathology of an acute epididymitis, we find that the epididymis becomes enlarged, tense and painful, and on section it is found congested, showing tubules distended with some fluid exudate. Frequently this passes on to actual abscess formation. The exudation which causes most of the enlargement is due to the inflammatory process around and between the convolutions of the tubules and duct of the epididymis. If this process goes on to pus formation, small cavities fill with pus and form small localized intertubular abscesses. The cells of the ducts are infiltrated, a certain amount of epithelium is shed, and the lumen contains a mixture of pus, epithelium and spermatozoa. The inflamed surface of the tunica vaginalis gives off an exudate which is at first clear, and later may contain pus and fibrin, or even go on to definite pus formation. It is claimed that a great deal of the pain present is due to the tension caused by the hydrocele. My personal experience has been that this is not the case, but that the tension occurring within the fibrous tunica covering the epididymis, caused by the inflammation and edema of that body, and which sometimes extend up into the cord, is primarily responsible for the pain. Hagner[1] in his original article quotes Monod and Terillon, who have shown that the enlargement of the epididymis is due to the edema or inflammatory exudate occurring in the cellular tissue surrounding the tubules rather than to any changes in the tubules themselves. After having dissected off the fibrous tunica from the cord and having made an opening in its upper and anterior border, they were able to fix a cannula into the cellular tissue and to inject through the cannula a weak solution of gentian violet. When the fibrous tunica had been sufficiently filled they saw that the infiltration characteristic of this special form was reproduced and resembled an increase in size of the epididymis. Hagner himself has duplicated the above experiment.

I have found the globus minor to be the part of the epididymis most frequently involved, the body more rarely, and the globus major least frequently. In one of my cases I found the entire body of the epididymis destroyed; a large abscess communicated directly into the testicle, of which a mere shell remained, owing to the great destruction of tissue. It was deemed advisable to remove the testicle.

When resolution commences the hydrocele is gradually absorbed, the tunica vaginalis is in many cases bound down by dense adhesions, either to the tunica albuginea or to the cremasteric fascia, or to both. Often absorption does not take place and a chronic hydrocele results. Within the epididymis itself the pus

1. Hagner, F. R.: Ann. Surg., 1908.

may be absorbed and the resulting pocket filled with fibrous tissue. Even the cells of the tube itself may become fibrosed, and from the resulting contraction the lumen may be occluded. It frequently happens that this process takes place en masse, and we have a resultant hard fibrous nodule which is usually felt, even for years afterward, in the globus minor. In some cases the gonococcus is harbored in the center of these nodules and may be the cause of a subsequent reinfection or recurrence of the urethritis. Baerman[2] has found gonococci in foci in the epididymis years after the infection occurred. It is undoubtedly true that a great proportion of these patients showing nodules are sterile on the side involved.

The advantages of operative interference in cases of gonorrheal epididymitis of all types are numerous. It is considered good surgery to evacuate pus in any locality. In my experience, if done for the relief of pain alone, the operation of epididymotomy is justifiable. Following Hagner, several observers have recorded their findings and results in a very convincing manner, and yet today this operation has not been generally adopted in the treatment of epididymitis.

The chief objections to operation appear to be:

(1) There is danger of injuring the tubule of the epididymis. There is very little danger of severing a tubule if care is taken and the proper technic is employed. Even though a tubule is severed, in my opinion, it soon unites or anastomoses. When we consider the remarkable reparative property of the vas, as illustrated in cases in which it has been severed with a view to causing sterility in certain mental subjects and in habitual criminals and has later reunited and functionated, it seems that the same may be probable in the epididymis.

(2) Puncture of the epididymis is an efficacious form of treatment. Many urologists adopt this procedure and report good results. My experience has been that puncture only temporarily relieves tension and pain, and usually does not favor early resolution, nor does it prevent fibrous tissue formation. It seems clear that though fluid may be aspirated by a small puncture made with a needle, there can be no drainage, and while the process is acute the edema or exudation soon causes again tension in the fibrous capsule.

(3) Epididymotomy is too radical a procedure to become popular. The operation is simple, however, and should take only a few moments to perform. If we can prevent or lessen the liability to sterility by its use it is clearly indicated.

Hagner[1] states that in every case in which he has operated fluid was present. He notes a marked falling off in the leukocyte count after operation. Reporting on nineteen of his own and two other cases, pus was present in seventeen of the twenty-one cases; in the globus minor in twelve cases, in the globus major and minor in three cases, in the globus major in one, and in the tunica vaginalis in one, the latter having no abscess involvement of the epididymis. In these twenty-one cases the gonococcus was demonstrated five times in the pus from the epididymis, and once in pus from the tunica vaginalis, when none could be found in the epididymis. He lays stress on the rapid disappearance of induration in both the cord and epididymis after operation, and states that nine patients have had a hard nodule of the globus minor, lasting for a long time, such as persist so frequently in those treated without operation. The average time before his patients were up was five days. He also observes that the discharge in patients treated medically increases after the swelling goes down, but decreases in patients after operation.

Baerman[2] states that in a considerable proportion of cases of epididymitis abscesses are formed, and that suppuration is regularly followed by the appearance of the hydrocele. He advises early interference to save the canal from occlusion.

Fig. 2.—Incision exposing the epididymis: *A*, parietal lamina of tunica vaginalis; *B*, visceral lamina of tunica vaginalis; *C*, tunica albuginea; *D*, epididymis; *E*, veins.

Eckels[3] observes that the usual symptoms—pain, swelling, dragging, etc.—are proportionate to the amount of fluid secreted. Consequently, the liberation from its sac of this fluid immediately relieves all symptoms. He states that if the disease can be arrested in its first stage by the method under consideration, pus and abscess formation can usually be avoided. Thus he argues that in an attack mild in character and seemingly amenable to medicinal treatment the operative plan is the more expedient. In my experience I have found this to be true. It is certain that in no case in which I have operated has there been any tendency for the process to increase after operation.

Eckels' conclusions are:

> The relief of pain is instantaneous; internal administration of sedatives, opiates or loathsome external applications are unnecessary. The abatement of fever takes place in from twenty-four to forty-eight hours. Swelling, tenderness and other symptoms rapidly disappear. There is no tendency to recurrence. There is insured a minimum of time lost from usual activities, and there is probably a smaller percentage of sterility following the disease.

Knight[4] agrees with Eckels in all of his statements, and reports five cases in which he used local anesthesia.

Crosbie and Riley[5] report twenty-eight cases, two of which were bilateral. They first used general, but now use local, anesthesia. Their method of inducing local

2. Baerman: Deutsch. med. Wchnschr., 1903, No. 40.

3. Eckels, L. S.: J. A. M. A. **61**: 470 (Aug. 16) 1913.

4. Knight, C. P.: Epididymotomy, J. A. M. A. **62**: 351 (June 31) 1914. Culler, R. M.: Epididymotomy, J. A. M. A. **60**: 415 (Feb. 8) 1913.

5. Crosbie and Riley: Boston M. & S. J., May 6, 1913.

anesthesia is identical with that which I have used, and which will be described later. They open and carefully examine the epididymis, and state that when the inflammation is most marked the epididymis is hard and indurated. Occasionally minute abscesses can be seen as yellowish-white dots. They make multiple punctures into the indurated area, whether or not pus can be seen. They conclude that with operation there is less liability to sterility, and that there is no recurrence unless there is a fresh infection; also that the course of the epididymitis is shortened as well as that of the urethritis.

Merritt[6] uses local anesthesia; he makes a short incision from one-half inch to one inch in length through the scrotum, and then with care advances the point of the knife into the globus minor. Several stabs or punctures are made, then a blunt pointed probe is pushed along the tracts and pus foci are located. The wound is packed and not sutured.

Cook,[7] the latest contributor to this subject, has observed 286 cases, in which he has operated. The average time in hospital was ten days. He also has had no recurrences, but has had a number of soldiers who suffered severe pain report for an operation several weeks later, this time on the other testicle. He does not mention, however, his conclusions as to sterility on those bilateral cases. He does the bottle operation and makes multiple punctures into the epididymis.

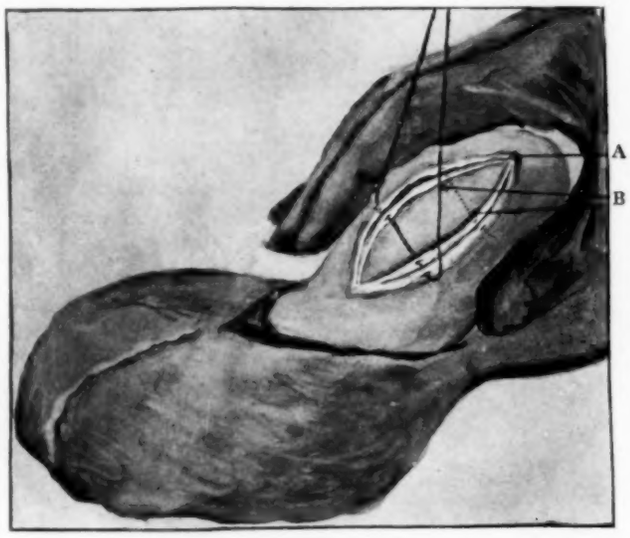


Fig. 3.—Method of securing drainage tube; *A*, retention sutures passing through the tunica vaginalis and the tunica albuginea. These hold the drainage tube in place. *B*, site for drainage of the hydrocele, between the laminae of the tunica vaginalis.

Nearly every contributor to this subject has agreed that the operation of epididymotomy tends to minimize the tendency to sterility of the affected side. It seems reasonable to suppose that by operative interference we may bring about a decrease in the amount of fibrous tissue formation involving the coils of the epididymis en masse. It is undoubtedly true that the contraction of this fibrous tissue causes a mechanical obstruction or occlusion of the epididymis in a large proportion of cases of epididymitis, and long after resolution a hard nodule can be palpated.

Hagner[1] does not state definitely whether epididymotomy decreases the liability to sterility of the affected side. He has carefully massaged the ampulla of the vas deferens and seminal vesicle on the side involved, and obtained motile spermatozoa, but has never been absolutely sure that in the process fluid from the opposite side was not expressed.

In a series of sixty-three cases he had three double ones, two of which showed motile spermatozoa.

Cunningham, in a series of fifty-seven cases, had six bilateral ones, four of which showed motile spermatozoa.

In my series of 115 cases of epididymotomy, twelve were bilaterally involved, and six of these showed motile spermatozoa. It was not often that living spermotozoa were demonstrated at the first attempt. In two of these cases negative results were obtained, even after repeated massages, up to two months, after which the results became positive. In one case three months elapsed after operation before spermatozoa were demonstrated. It is reasonable to suppose that some of the six negative cases might have shown positive results had it been possible to keep them under observation a longer period. This was impossible owing to their discharge from hospital. Only bilaterally involved cases were selected for examination as to sterility, as in unilateral cases the possibility of expressing material from the unaffected side would have been too great, no matter how carefully the massage had been conducted.

In order to compare the above findings with non-operative cases of epididymitis I have been able to select four cases only which were bilaterally involved and which had not been treated surgically. One of these showed motile spermatozoa, while there were repeatedly negative. At some future date I hope to report my observations as to sterility or fertility on a larger number of cases.

Regarding the choice of anesthesia, a great deal depends on the case. In advanced cases I do not advise anything but general anesthesia. This is on account of the dense adhesions which have formed and which make it almost impossible to obtain complete local anesthesia. In many neurotic individuals it is very trying to have to operate while a certain amount of pain is being caused. However, in some early cases I have used local anesthesia with success, and without the slightest trace of pain or dragging. The only objection to this method is that it may interfere with the healing of the wound, while the infiltration caused by the solution may sometimes delay union or be an incentive to secondary infection. When local anesthesia is used, I first inject from 10 to 20 c.c. of a 0.18 per cent. solution of cocain with epinephrin into the cord where it emerges from the external ring; this is easily accomplished by grasping the cord between the thumb and forefinger. After waiting a suitable length of time the infiltration of the skin and dartos muscle at the site chosen for the incision is proceeded with.

The following operative technic is employed: The patient is prepared as for a general anesthesia; the pubes, scrotum and thighs are carefully shaved and the parts painted with a weak alcoholic solution of iodin. After the first painting has dried, a second one is applied, and the penis is carefully wrapped in sterile gauze. The incision is made one-half inch external to

6. Merritt, E. P.: Epididymotomy, J. A. M. A. **65**: 949 (Sept. 11) 1915.
7. Cook, R. L.: Surgical Treatment of Epididymitis, J. A. M. A. **70**: 981 (April 6) 1918.

the median raphe, and large enough to permit delivery of the testicle and membranes intact. Adhesions, if present, are freed, and the testicle with the tunica vaginalis is delivered. A small puncture only is made through the tunica vaginalis to evacuate the hydrocele. The epididymis is then carefully palpated externally, and the point of greatest induration selected. An incision is made through the tunica vaginalis covering the epididymis in the long axis of that body, commencing from the most dependent portion of the globus minor upward to the extent of from 1 to 1½ inches. This layer is usually found to be adherent to the tunica albuginea covering the epididymis, and is carefully peeled back for a distance of about one-half inch in all directions.

The tunica albuginea is then carefully divided in the same manner, this also being freed from the epididymis for a considerable extent in all directions. I consider this step important, as it relieves the tension caused by the edema on these fibrous layers, thereby relieving pain, and is an important factor in the subsequent resolution. There are usually some epididymal veins in the tunica in this region, but they can easily be avoided. A blunt probe is then carefully inserted in several places into the epididymis, first into the globus minor, then into the body, and if there is induration present in the globus major, into that body. If a pus pocket is found a slender hemostat is inserted and the opening carefully enlarged. Frequently small encapsulated abscesses are seen which may require puncturing with the point of a knife. My reasons for selecting the site mentioned for incision of the fibrous tunica are: first, it is the most direct route which can be followed into the epididymis, and, second, the cavity of the tunica vaginalis is not disturbed.

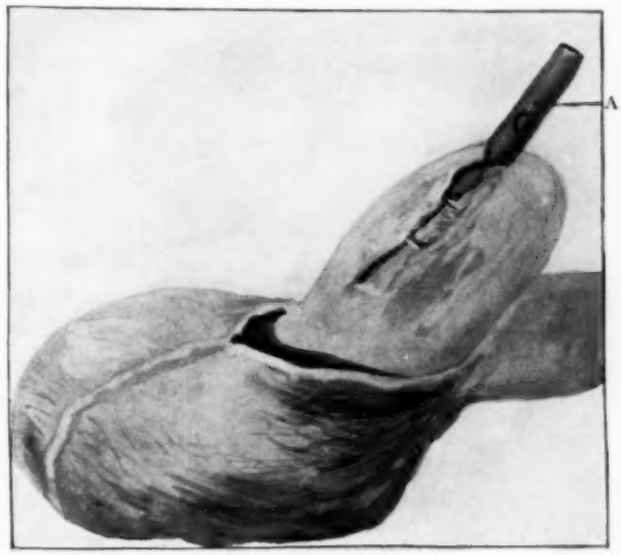


Fig. 4.—Position of drainage tube: *A*, fenestrated rubber tube drain. The tube lies between the fibrous tunica and the epididymis, thus preventing adhesions and giving ample space for drainage.

If the puncture is made by the indirect method, that is, from inside, there are undoubtedly adhesions formed after the serum or pus has been evacuated into the cavity of the tunica vaginalis. This undoubtedly interferes with drainage. In any event it seems reasonable to believe that better drainage is instituted by the direct than by the indirect method.

A plain fenestrated rubber tube is used for drainage. If there is a large pus pocket, the tube is inserted into its opening; if only small local abscesses or edema are found, the tube is laid in the long axis of the epididymis and two or three sutures of plain gut are used to bring the fibrous covering over it, thus holding it in place and giving ample space between the epididymis and its covering for free drainage. The testicle is then replaced, care being taken that the epididymis lies posteriorly, and that the drainage tube lies in the lower angle of the scrotal wound. The dartos and fascia are then united by a continuous plain catgut suture. The wound is further approximated by through-and-through mattress retention sutures of silkworm gut inserted about three-eighths inch from the edge of the wound. Two or three of these are all that is required. The skin is then approximated by a few silk sutures. In severe cases the drainage tube may be left in place for three days. In ordinary cases two days will suffice. The sutures are removed on the seventh day. The dressing used is the so-called Bellevue bandage, which to my mind cannot be improved on. In certain cases in which adhesions are present, or when it is not deemed advisable to deliver the testicle through the wound, the foregoing technic may be carried out through a small scrotal incision, the epididymis being brought into the opening, its fibrous covering incised and the globus minor, body or globus major probed for pus. The hydrocele may be evacuated by carrying the probe under the tunica vaginalis into the sac from the lower angle of the wound in the fibrous tunica. The remaining steps are identical with those used when the testicle is delivered.

The patients are kept in bed about four or five days and are then allowed to be up and about. Those patients who are on irrigation treatment are instructed to resume irrigations on the day following the operation. At the end of about one week the prostate and vesicles are carefully examined and if the condition of the urethritis warrants, the vesicles, particularly on the infected side, are carefully massaged, so that free drainage from the vesicular side may be assured.

If the operation is undertaken early, before there is any thickening of the tunica vaginalis and while the hydrocele fluid is still clear, we avoid adhesions, fibrin deposits, etc., and relieve the edema before chronic infiltration takes place. By operating early we may also prevent pus formation. In some cases no hydrocele is found, but in the greater proportion of cases fluid is present in amounts varying from 5 c.c. to 80 c.c. In none of my cases has there been a recurrence of hydrocele following operation, which, to my mind, is a point in favor of making only a small incision in the tunica vaginalis in order to evacuate the fluid, rather than of making a long incision which has to be closed, or of doing the bottle operation.

Resolution of the inflammatory process commences almost immediately. I do not consider resolution complete until all the tenderness has disappeared from the epididymis and cord, and the parts have returned as nearly as possible to normal. In none of the cases observed after operation has there been the same amount of chronic thickening which remained after resolution had taken place in patients not operated on. There is usually a slight amount of thickening, some of which is undoubtedly due to scar formation, and

some due to fibrous induration caused by the inflammatory process. The operative advantages as to the end-result following resolution can be aptly demonstrated in several cases in which there has been a bilateral infection, one side of which has been operated on and the other treated otherwise. Without exception these cases show less thickening on the side where surgical interference has been employed. Several of these patients had been treated expectantly on one side before I had commenced epididymotomy as a routine measure. This observation throws some light on the point of resolution in favor of surgical interference.

I have yet to encounter a case in which the operation has not almost immediately relieved the pain. There have been a few patients who complained of tenderness a day or so later.

In a comparative study of fifty patients treated by the operative method and fifty treated otherwise the following points are brought out: Of the fifty operative cases, pus was found in 80 per cent., either macroscopically or microscopically, and in those in which pus was found the gonococcus was present in 32 per cent.

Bazet[8] found gonococci in 33 per cent. of his cases. The wound, including the sinus, healed in an average period of fourteen days. Pain was present in varying degrees in all cases, and was relieved in from two to forty-eight hours.

There was a hydrocele present in 90 per cent. of cases, and in the 10 per cent. not having hydrocele the pain was relieved immediately following operation. In the fifty nonoperative cases pain was present in varying degrees in 98 per cent. The accompanying table shows the comparative length of time in which pain was relieved; also the comparative end-results when resolution was considered complete.

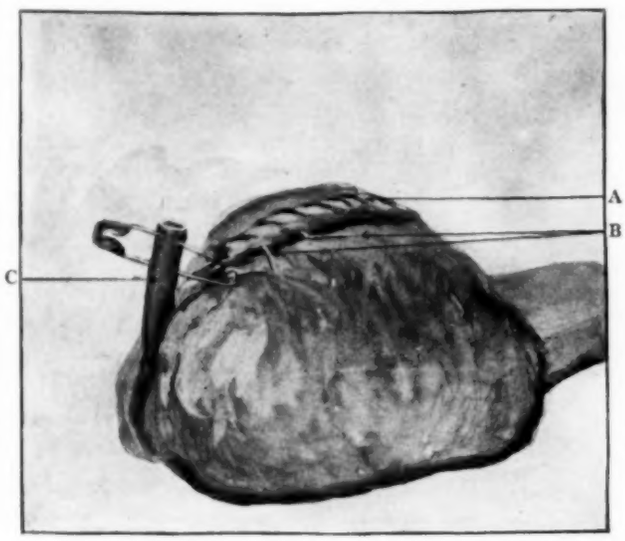


Fig. 5.—Final sutures: *A*, silk skin suture; *B*, silkworm-gut mattress retention sutures; *C*, drainage tube.

In the nonoperative series it is interesting to note that three cases have relapsed, or reinfection of the original process has taken place, at some period following primary resolution. In one case in the series there were three such relapses. In one case there was a nodule as large as a walnut, which was still quite tender, although the original infection had occurred in the year 1912.

TIME REQUIRED FOR RELIEF OF PAIN AND FOR COMPLETE RESOLUTION, WITH END RESULTS

| | Pain Relieved Within | Average Days Resolving | Complete Resolution Per Cent. | Very Slight Thickening, Per Cent. | Moderate Thickening, Per Cent. | Marked Thickening, Per Cent. |
|---|---|---|---|---|---|---|
| 50 operative cases | 24 hours | 30 | 40 | 58 | 2 | 0 |
| 50 nonoperative cases | 3-6 days | 40 | 8 | 60 | 30 | 2 |

8. Bazet: J. d'urol. méd. et chir., Jan. 24, 1915.

This is in marked contrast to the results obtained by the operative method. There were no relapses in the series, and in only one case was there a suspicion of reinfection. In this case the drain was removed within twenty-four hours and for two or three days there were some tenderness and pain, but no increase in size. The process subsequently went on to rapid resolution.

It was also noted that the shorter the duration of the epididymitis prior to operation, the shorter the period of resolution. This seems to prove that early interference, that is, before the tunica vaginalis becomes thickened, fibrin deposits are formed, and chronic infiltration takes place, or before pus foci are formed, is the proper procedure in cases of acute epididymitis.

The observations as to the improvement of the urethritis are markedly in favor of the operative series. In over 50 per cent. of the nonoperative cases a relapse of the urethritis occurred, while of the operative cases only 4 per cent. relapsed.

It has not been possible, in the cases selected for comparison, to note the findings in the vesicles, but it would be interesting to follow up these cases from the standpoint of vesicular infection or reinfection following the epididymitis.

CONCLUSIONS

1. Early operation is advised to prevent destruction or occlusion of the tubules.
2. The pain is relieved almost immediately by surgical interference.
3. The process is considerably shortened.
4. No accurate conclusions as to sterility may be made except in bilateral cases, but present evidence favors epididymotomy as a means of preventing sterility.
5. There is less liability of a recurrence of the urethritis.
6. The operation should be more generally employed.

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**Tuberculosis Among Industrial Workers a Home Problem.**—A special report of the Medical Research Committee of Great Britain deals with the prevalence and etiology of tuberculosis among industrial workers. The city of Birmingham was selected for a special inquiry and the nonferrous metal trade was chosen. Forty works were visited and inspected thoroughly and as many of the notified persons as could be identified were questioned about themselves. A dangerous proximity was observed in certain departments, the girls working very close together. The objectionable habit of spitting into the receptacles which hold the lubricating mixture, found in all shops where "wet" metal work is carried on, is condemned as being a disgusting and possibly a dangerous practice. No evidence of any other dangerous trade habit was found. The home housing conditions were found very unsatisfactory in many parts of the central or crowded area, and the evidence goes to show that the home is really the principal place of infection either through contacts or imminent in the house itself.—*Med. Officer* **21:** 121, 1919.

# DISSEMINATED NECROSIS OF THE PULMONARY CAPILLARIES IN INFLUENZAL PNEUMONIA *

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One of the difficulties in attempting to find an explanation of either the hemorrhage or the huge edema[1] of the lungs in influenzal pneumonia is that many different stages are encountered, most of them well along or late in the disease.

Very early in this attempt, attention was directed to the presence of a layer of fibrin close to the lining of the alveoli and ducti alveolares, often a very thin layer and in some instances the only fibrin present. With lobar pneumonia (by this term I mean a disease which is lobar pneumonia not only anatomically but also clinically), such a limitation of the fibrin deposit to the alveolar lining is not common.

Another outstanding condition is the necrosis of the alveolar lining epithelium, which appears early as a hyaline layer in which the outline of the separate cells is entirely lost, thus becoming a layer of necrotic cells sometimes with fibrin on its inner surface or in it and in some instances with very little fibrin anywhere else in the alveoli. Later in the disease these cells are reproduced and the large new cells may be found with mitotic nuclei in them.

## DISSEMINATED CAPILLARY NECROSIS

While studying these as well as other conditions, I encountered a feature of the changes in influenzal pneumonia which may throw some light not only on the hemorrhages but also on the edema. This feature, a disseminated necrosis of the interalveolar capillaries, is readily found in places markedly changed, where the alveoli are already filled with blood or plasma, with the addition at times of the comparatively slight leukocytic exudate so characteristic of influenzal pneumonia. But with such changes it may well be inferred that necrosis of the interalveolar walls and of the capillary meshwork they contain is altogether secondary to alterations within the air sacs. But examination of many sections from many postmortem examinations has revealed some conditions in which such an inference of necrosis secondary to the pneumonia may well be doubted, and the accompanying photomicrographs are an attempt to set these lesions clearly forth with the hope that others, too, will search for them.

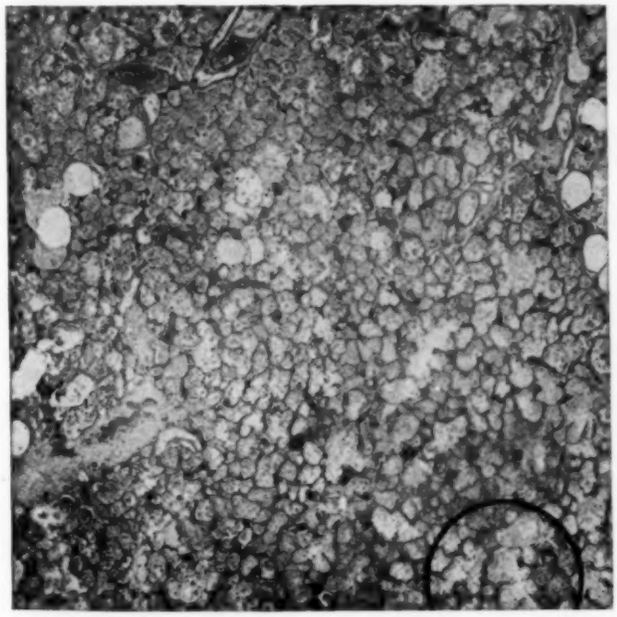

Fig. 1.—Most acini in this section of about 7 sq. mm. of lung tissue from a patient who died from influenzal pneumonia contain some red blood corpuscles, some none; all contain some leukocytic exudate. Edema is more widespread than either of these alterations. The necroses indicated by Fig. 2 are everywhere as abundant as in the small part of the section selected for Fig. 2; × about 14.

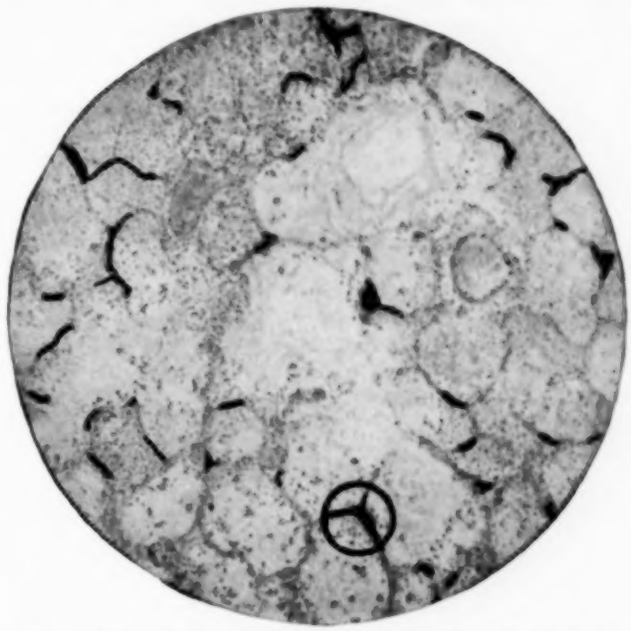

Fig. 2.—The necrotic regions are made black with india ink to show their number and the amount of the interalveolar capillary meshwork and alveolar wall involved; × about 60.

Although present in a few lungs seen in other postmortem examinations, the best examples of this disseminated necrosis were found in some of the small regions of pneumonia in the lower lobe of the right lung (weight 1,350 gm.) of a soldier, aged 23, who became acutely ill after having had a slight cold for six days and who died four days later.

Figure 1 represents about 7 sq. mm. (magnification 14 diamaters) of a section in which the pathologic condition is chiefly edema. Scarcely any alveoli are jammed full of red blood cells. A little fibrin is peripherally disposed in the air sacs, and a little exudate of leukocytes is present in most of them, but at no place is there any highly cellular consolidation. The pale oblong space jutting in from the lower half of the left edge is a hugely dilated perivascular lymph channel. Part of the circle in the lower right-hand corner represents the region shown in Figure 2 (magnification 60 diameters); in this the portions of the interalveolar meshwork of capillaries which are necrotic have been made black with india ink, as accurately as possible. The region included in the circle near the lower margin is shown in Figure 3 (magnification 470 diameters).

The changes that are illustrated by these figures, such as fragmentation of nuclei and "nuclear dust" in tissue taken a few hours after death, and, moreover, in which there is no suggestion of postmortem change; a

* From the Pathological Laboratory, Rush Medical College.

1. LeCount, E. R.: The Pathologic Anatomy of Influenzal Bronchopneumonia, J. A. M. A. **72**:650 (March 1) 1919.

widely disseminated, sharply outlined focal necrosis of the minute blood vessels and with so little of alteration except edema in the lung tissue, goes a long way toward at least suggesting an explanation for a number of things, such as the early hemorrhages in the lung, the escape of such large amounts of fluid from the blood into the lungs and from them into the pleural cavities, also the "button-like" firm peripherally located regions of consolidation compared by many observers to hemorrhagic infarcts.

They also suggest that the disease if not very early a systemic infection may become so later, because the nature of these lesions is best explained by embolism. In such sections as these no organisms other than those commonly present have been found.

### CONCLUSION

In conclusion it may be well to emphasize that the 7 sq. mm. of Figure 1 is but part of a section, and that the necrotic regions represented by india ink in Figure 2 may be found not only in all parts of the 7 sq. mm. of

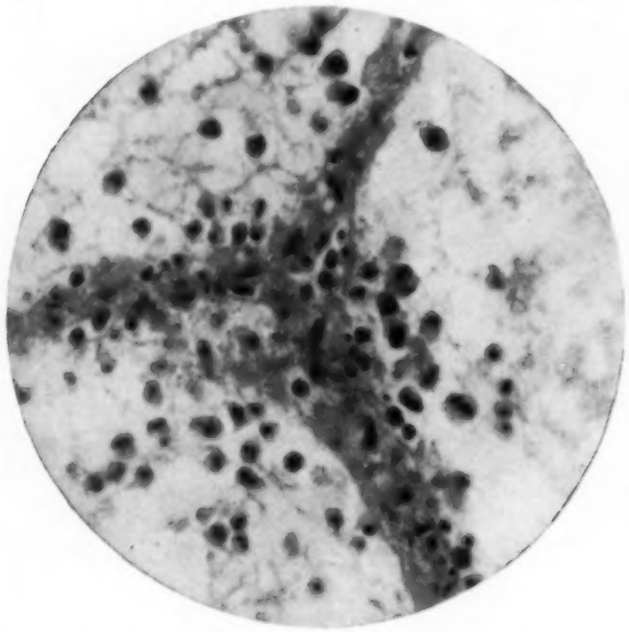

Fig. 3.—No red blood corpuscles or very few are present in the necrotic places, more commonly at junctions of adjacent alveoli, and their walls are replaced by leukocytes, fragmented nuclei and fibrin, for the channels and circulation are interrupted. The capillary meshwork is continued at the ends of these necroic regions and the blood circulates in them as usual; × about 470.

Figure 1, but also in all parts of the section containing the 7 sq. mm., and in other sections as well; also, as stated, in sections of some of the other lungs examined. It may well be that such discrete necroses as these, with so little of other change except edema, represent a phase of the disease which is of short duration.

Influenza has been compared with the exanthematic fevers such as measles. Prodromal engorgement of the conjunctival blood vessels is referred to by many observers,[2] also the early appearance of lividity of the pharynx, described as a red fringe or crescent bordering the hard palate, with minute hemorrhages and a papulovesicular rash in the livid mucosa (Alexander). Moreover, Oberndörfer[3] has defined the disease as a bacteriemia with localization of the virus in the pulmonary blood vessels and secondary infection of the lung tissue so involved. For the foregoing reasons it has seemed best to attempt some description of these necroses at this time.

2. Alexander: Berl. klin. Wchnschr., 1918, No. 38, abstr., Deutsch. med. Wchnschr., **44**: 1171, 1918. Bloomfield and Harrop: Bull. Johns Hopkins Hosp. **30**: 1, 1919.

3. Oberndörfer: München. med. Wchnschr. **65**: 810, 1918.

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## STUDIES IN STREPTOCOCCIC INFECTIONS AT CAMP CUSTER, MICHIGAN

### WITH SPECIAL REFERENCE TO INFLUENZA AND OTHER ANTECEDENT INFECTIONS

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Sixty-five per cent. of the deaths from acute infections occurring in this camp since its establishment and coming to necropsy have been due to the streptococcus. If the month of October, 1918, is excluded, when influenza was epidemic here, the streptococcus has been responsible for 75 per cent. of the fatal acute infections. For more than a year the attention of this hospital has been focused on the diseases caused by this extremely prevalent and virulent organism, and the facts which this experience has brought to light are here assembled.

TABLE 1.—BACTERIOLOGIC FINDINGS IN ACUTE INFECTIONS AT NECROPSY

| | Deaths from Streptococci | | No. Deaths from | |
|---|---|---|---|---|
| | Number | Per Cent. | Pneumococci | Other Acute Infections |
| Prior to the influenza epidemic.. | 37 | 70 | 10 | 6 |
| During the influenza epidemic.... | 142 | 62 | 78 | 8 |
| Since the influenza epidemic..... | 26 | 86 | 1 | 3 |
| Total ..... | 205 | 65 | 89 | 17 |

Reference to the accompanying chart will show the total incidence of streptococcus, compared to its closest competitor, the pneumococcus. The incidence of measles has also been charted. It will be seen that streptococci, except for a period in the spring and summer of 1918, have always outnumbered pneumococci. During the summer months, living conditions peculiar to military establishments are less productive of carriers, and cross infections by such organisms as hemolytic streptococci appear to be less frequent. Certainly during the summer months the relative incidence of these two infections more nearly approached what is commonly observed in civil life.

This camp was several months old before streptococcic infections began to appear. It was in January, 1918, that acutely fulminating pleurisies appeared associated with bronchopneumonia, terminating fatally in a high percentage of cases. Irons and Marine[1] were among the first to recognize the relation of these fatal infections to such antecedent factors as exposure and fatigue, or to other diseases, such as measles. Throughout the winter, streptococcic invasions con-

1. Irons, E. E., and Marine, David: Streptococcal Infections Following Measles and Other Diseases, J. A. M. A. **70**: 687 (March 9) 1918.

tinued to occur with such frequency and astonishing virulence as to awaken the greatest concern. However, with the advent of spring they gradually lessened, and virtually disappeared during the summer. Coincident with the appearance of influenza in October, 1918, the streptococcus again came forward as the cardinal cause of death, regularly manifesting itself in a bronchopneumonia. During the epidemic, 674 deaths occurred, about two thirds of which were due to the streptococcus. During the four months since the epidemic, streptococci have occurred with even greater relative frequency, twenty-six out of the last thirty cases of acute infections coming to necropsy having had a fatal issue owing to the presence of this organism. During February, 1919, eighty-four infected wounds have shown hemolytic streptococci. Many cases of otitis media and numerous very severe mastoid infections have also appeared. Indeed, the greatest variety of localization has been encountered. This has been noted following the crest of each new wave of acute infections.

### OCCURRENCE OF STREPTOCOCCI AS SECONDARY INFECTIONS

Streptococci have occurred at Camp Custer chiefly as secondary infections. Two methods of invasion have to be considered:

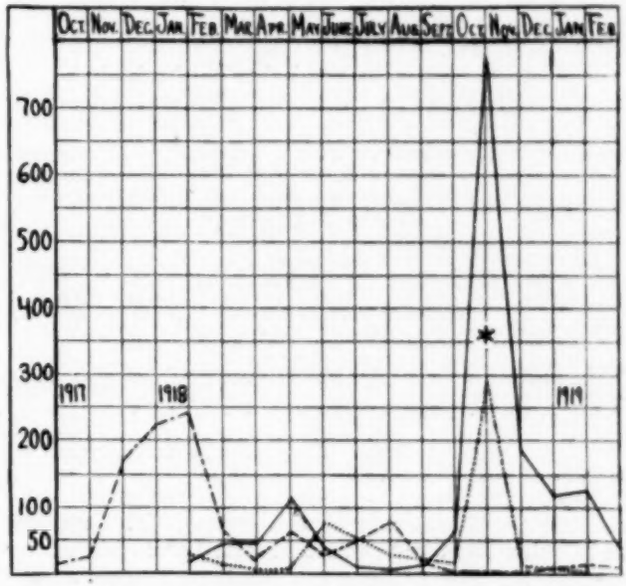
1. A very sudden and severe antecedent infection may so lower resistance that the ordinary mouth organisms gain admittance to the body with ease and in great numbers. An extensive example of this mode of secondary invasion was seen in the influenza epidemic. In this epidemic, death was invariably the result of a bronchopneumonia. These bronchopneumonias were not produced by a single organism, as would have been the case had a highly virulent and contagious organism been abroad at the time. On the contrary, they appeared to be caused in each case by the organism which the individual happened to have predominating in his mouth at the time, no matter whether that was streptococcus, pneumococcus, staphylococcus or Pfeiffer's bacillus. The very suddenness with which the epidemic came, attended immediately by secondary pneumonias, enforces the same idea. During this epidemic, *Streptococcus hemolyticus* caused only a few more deaths than the nonhemolytic strains. Pneumococci were recovered in about half as many cases as streptococci, and only a few staphylococci and Pfeiffer's bacilli were found. However, with the advance of the epidemic, *Streptococcus hemolyticus* became more and more prominent, while other causative organisms were encountered less frequently. *Streptococcus hemolyticus* appeared to gather virulence and prevalence more rapidly than the other organisms encountered earlier.

2. In other cases the virulence of the streptococcus appears to be the principal determining factor. Such cases were encountered in the early months of 1918, to which we have already referred. At that time masks were not generally used throughout the hospital, and the cubicle system was not in vogue in all wards. Superinfection was therefore much more of a possibility than at the later period, such as during the influenza epidemic. The fact that for several months antedating the appearance of these acute streptococcus infections many cases of measles and quite a number of so-called "colds" had been admitted to the base hospital with almost negligible complications speaks for a more important factor than the antecedent infection. This was evidently furnished in the virulent strains of streptococci brought into this camp by new troops arriving in January, 1918. The fact that many of these new arrivals were ill on reaching camp was brought out in the empyema report[2] of this camp covering that period.

### FACTORS IN THE INCIDENCE OF STREPTOCOCCIC INFECTIONS

There are undoubtedly many contributory factors making for streptococcic invasions. An analysis of the records of 2,149 cases of pneumonia following influenza was undertaken in an effort to bring to light some of these factors. The majority of these pneumonias were, as we have said, streptococcic in origin.

It was not possible to determine what proportion of troops in this camp came from large cities, small towns, and rural districts, respectively. But it was possible to learn the relative incidence of influenza in




Total incidence of streptococcus and pneumococcus infections charted by months, Camp Custer, Mich., September, 1917, to March, 1919: continuous line, streptococcus; broken line, pneumococcus; dotted line, measles; star, influenza epidemic.

troops falling into these three classes. From these figures the proportion of influenza that was complicated by pneumonia and terminated fatally was obtainable. The results of this analysis are set forth in Table 2. The percentage of pneumonia following influenza was more than twice as high in troops from rural districts as in troops from small towns or cities. This difference did not seem to exist as far as influenza alone was concerned. In other words, the existence of a previously established immunity was not evident in the case of influenza, but was evident in respect to secondary infections such as pneumonia. Troops from rural districts were probably no more susceptible to influenza than any other troops, but twice as high a percentage from rural districts died because they were twice as susceptible to secondary invaders, particularly to the streptococcus. After pneumonia developed, the death rate was approximately the same.

2. Review of War Surgery and Medicine, **1**, No. 9, 1918.

Out of 39,675 troops stationed at this camp at the time of the influenza epidemic, approximately 23,000 had seen less than two months' service, or about 60 per cent. of the command was composed of new troops. Table 3 illustrates the greater susceptibility of new troops to both the initial and the secondary infections, and the attendant high mortality in such troops. The physical strain incident to change from civilian to army life which new troops have to undergo before they become acclimated probably accounts in part for the increased susceptibility to infections. As Irons and Marine pointed out, the same factors were probably operative during the winter months of 1918. Unaccustomed to long hikes, exposure and the undoubted physiologic shock of vaccination, new troops show less resistance to all acute infections. Opie and his collaborators found the same thing to be true at Camp Pike.[3] Wallis collected even more striking figures at Camp Lee.[4] But in addition to all these possible factors, there seems to be still some intangible but evident difference between new and old troops, on account of which the latter become less susceptible to disease when both classes are under the same conditions.

That organisms gain admission to the body of the host owing to disturbances in the normal balance of resistance and virulence is well known. This method of invasion has already been referred to in discussing postinfluenzal pneumonia, and needs no further amplification. But the question of contact infection remains to be considered. Table 4 serves to illustrate the effect of contact on the incidence of secondary pneumonia. This point is forcibly impressed after comparing the figures for medical officers and nurses with those for line officers. The high incidence of infection among those in the hospital in contact with the disease during the influenza epidemic has another explanation in the extreme tax on physical endurance put on every one during those days. We have no ready explanation for the low incidence of influenza and pneumonia in hospital corps men, other than the extreme care taken to protect them by means of instruction, masks, cubicling in barracks and mess table screens. The possibly less intimate contact with patients as compared to physicians and nurses may also offer some explanation. Further, men were instructed to report sick on first symptoms of indisposition, and thus serious complications were, for the most part, avoided. In addition, they were old troops, and had been hardened and kept fit by daily drill.

TABLE 2.—COMPARISON OF THE INCIDENCE OF SECONDARY PNEUMONIA IN TROOPS FROM THE CITY AND COUNTRY: BASED ON 8,788 CASES OF INFLUENZA, COMPLICATED BY 2,149 PNEUMONIAS

| Source | Per Cent. of Total Influenzas | Per Cent. of Total Pneumonias | Per Cent. Influenzas Developing Pneumonia | Pneumonia Case Fatality per Cent. | Influenza Case Fatality per Cent. |
|---|---|---|---|---|---|
| From cities of over 10,000 | 27.6 | 18.2 | 16.0 | 28.5 | 4.5 |
| From cities and towns under 10,000 | 33.3 | 21.9 | 16.1 | 30.9 | 4.9 |
| From rural districts* | 39.1 | 59.9 | 37.4 | 28.9 | 10.8 |

* Patients whose occupation was farming or whose address was R. F. D.

Pneumonia was twice as frequent in army nurses as in civilian nurses. The latter were a part of the nursing personnel only for the emergency period of the epidemic. In spite of the utmost care exercised to see that every one went to bed as soon as sick, many army nurses were found ill who had given no heed to warnings and remained on duty through several days of sickness.

TABLE 3.—THE EFFECT OF LENGTH OF SERVICE ON THE INCIDENCE OF INFLUENZA AND SECONDARY PNEUMONIA

| | Length of Service | | |
|---|---|---|---|
| | One Month or Under | Two Months | Over Two Months |
| Approximate strength* | 8,598 | 14,857 | 16,220 |
| Total number of influenza cases | 3,184 | 2,834 | 3,299 |
| Per cent. of command developing influenza | 37 | 19 | 20.3 |
| Total number of pneumonia cases | 813 | 645 | 691 |
| Per cent. of command developing pneumonia | 9.4 | 4.3 | 4.2 |
| Per cent. of influenza developing pneumonia | 25.5 | 22.7 | 20.9 |
| Deaths: | | | |
| Total | 431 | | 203 |
| Per cent. of influenza | 7.1 | | 6.1 |
| Per cent. of pneumonia | 29.5 | | 29.2 |
| Per cent. of command | 1.8 | | 1.2 |

* Based on weekly headquarters report of mean strength of command.

It was noted during the influenza epidemic that, whereas pneumococci occurred as infecting agents in about one third of the early cases, they gradually gave place to hemolytic streptococci and eventually disappeared entirely. The pneumococcus has been isolated only three times as the cause of disease in a period of two months (January and February, 1919). What led to the disappearance of the pneumococci we do not know. Where did so many hemolytic streptococci come from? Droplet infection as a cause of secondary pneumonia was negligible during the period of prevalent influenza. Practically every bed was cubicled, and everybody wore masks. Moreover, we have repeatedly demonstrated the effectiveness of the mask, as used in this hospital, by coughing into blood agar plates held at various distances from the mouth, with and without masks. Weaver,[5] in a series of extensive experiments, has shown very conclusively the efficiency of the mask in preventing droplet infection. In this camp special care in the boiling of mess equipment has apparently been effective in stamping out small epidemics of tonsillitis in line organizations. Lynch and Cumming[6] have presented statistics to show the reduced incidence of influenza in organizations whose mess equipment was properly sterilized after using. Even with the use of masks there is recognized carelessness in the washing of hands. Undoubtedly the hand to mouth route accounts for the spread of at least some of these infections.

TABLE 4.—THE INFLUENCE OF CONTACT ON THE INCIDENCE OF INFLUENZA AND SECONDARY PNEUMONIA

| Organization | Strength | Influenza | | Pneumonia | | Deaths | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| Total in camp | 39,675 | 9,317 | 23.4 | 2,149 | 5.4 | 674 | 1.7 |
| All medical and dental officers | 164 | 42 | 25.6 | 9 | 5.5 | 2 | 1.2 |
| All other officers | 1,436 | 95 | 6.6 | 22 | 1.4 | 0 | 0.0 |
| Ward men in base hospital | 120 | 14 | 11.7 | 3 | 2.5 | 1 | 0.8 |
| Other corps men in base hosp. | 455 | 57 | 12.0 | 12 | 2.6 | 7 | 1.5 |
| Army nurses | 144 | 44 | 30.6 | 15 | 10.4 | 2 | 1.4 |
| Civilian nurses | 121 | 44 | 36.3 | 8 | 6.6 | 1 | 0.8 |

3. Opie, E. L.; Freeman, A. W.; Blake, F. G.; Small, J. C., and Rivers, T. M.: Pneumonia Following Influenza (at Camp Pike, Ark.), J. A. M. A. **72**: 556 (Feb. 22) 1919.

4. Wallis: J. Lab. & Clin. Med. **4**: 309, 1919.

5. Weaver, G. H.: Droplet Infection and Its Prevention by the Face Mask, J. Infect. Dis. **24**: 218 (March) 1919.

6. Lynch, C., and Cumming, J. G.: Rôle of Hand in Influenza, Mil. Surgeon **43**: 597 (Dec.) 1918.

### LOCALIZATION OF STREPTOCOCCI

There were recently reported a number of wound infections in a clean surgical ward. Cultures were made from the throats and wounds of all patients in that ward. It was found that all of those patients whose wounds were infected by hemolytic streptococci harbored numbers of the same organisms in their mouths, whereas those patients whose wounds were not infected did not have this organism in their mouths at the time. Transfer of organisms from mouth to wound by means of the hands can be considered possible in some cases. A further explanation may be found in the probable occurrence of a transient symptomless bacteremia with portal of entry in the throat and localization at the point of injured tissue in the wound. The fact that blood cultures in all these cases were negative does not exclude the possibility of this route of infection of clean wounds. In one instance a clean abdominal wound had healed and the patient was being prepared for discharge. This wound suddenly broke down, and hemolytic streptococci were recovered. The same organism was also found in the patient's throat.

In another instance, hemolytic streptococci were recovered in pure culture from a small abscess that developed in the arm at the site of an antipneumococcus vaccine injection. This soldier was a carrier of large numbers of hemolytic streptococci in his throat at the time.

TABLE 5.—STREPTOCOCCI IN THROATS IN HEALTH AND IN DISEASE

| Condition of Throats | Number of Cultures | Total Cultures Showing Streptococci | | Showing Hemolytic Streptococci | | Having a Growth of 50% Hemolytic Streptococci | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| Normal throats, camp organizations | 3,299 | 3,044 | 92.2 | 1,469 | 44.5 | 374 | 11.4 |
| Normal throats, laboratory det. | 1,662 | 1,371 | 82.4 | 741 | 44.5 | 169 | 10.1 |
| Patients with upper respiratory infec. | 1,089 | 1,024 | 96.1 | 833 | 77.9 | 511 | 47.6 |
| Patients convalescent from pneumonia | 203 | 182 | 88.6 | 141 | 69.4 | 87 | 42.8 |
| Patients with empyema | 739 | 596 | 80.6 | 465 | 60.2 | 223 | 30.1 |

Cultures on blood agar plates to the number of 6,972 have been made from the throats of both sick and normal individuals. These cultures were taken during a period of several months, and included patients in the hospital and members of other camp organizations. The principal fact brought out was that many normal as well as ill persons are carriers of hemolytic streptococci, and that the significant observation lies not merely in the presence of the hemolytic streptococcus, but rather in knowing in what numbers it occurs. For this reason an endeavor has been made to ascertain the percentage of throats showing on culture over 50 per cent. of hemolytic streptococci. This estimation was made in each case, after a rough determination of the total number of colonies growing on blood agar plates, by calculating the percentage of hemolyzing colonies with streptococcic characteristics. The importance of this distinction was made apparent in the summer of 1918, when the small number of hemolyzing colonies on plates was striking, whereas during the fall and winter it has been not unusual to find from 60 to 80 per cent. of hemolytic streptococci in so-called normal mouths.

In our experience, hemolytic streptococci are rarely found in the nose. From the posterior pharyngeal wall and sputum they may be recovered in a considerable number of cases. The tonsil plays the most important rôle in harboring this organism. Many careful cultures from the tonsils of normal persons not particularly exposed to patients ill with streptococcic infections have shown hemolytic streptococci in 90 per cent. of cases. On the other hand, we have only occasionally found them in the throats of those who have had their tonsils removed. Hemolytic streptococci have been recovered from the depths of 80 per cent. of tonsils examined after operative removal. These results are in line with those of Nichols and Bryan.[7] In some cases we were surprised to find hemolytic streptococci in throats from which tonsils were said to have been removed. These patients were examined by a throat specialist, and in every instance some remaining tonsillar tissue was found.

### LESIONS PRODUCED BY STREPTOCOCCI

*Lungs.* — Sixty-eight per cent. of all streptococci recovered in the last fourteen months were from patients with acute pulmonary infections. In these cases bronchopneumonia has been an invariable finding. The organism was identified either from the lung at necropsy or in the sputum during life. Moreover, 70 per cent. of all the pneumonias occurring in this camp have been of streptococcic origin.

*Pleura.*—Likewise by far the greatest number of pleural infections have been produced by the streptococcus. Coincident with the bronchopneumonias of the winter of 1918, very acute and fatal suppurative pleurisies were encountered. In many instances it was impossible to say which process preceded the other. Strikingly different were the pleural infections encountered in the wake of the influenza epidemic. The proportion of all pneumonias developing fluid in the chest was nine times as great during January, February, March and April as in the month of October, 1918. Pneumonia definitely preceded the appearance of fluid in the latter group of cases. Unlike also were these two periods in the course and outcome of their pleural infections. Pleuritis following influenza ran a much less violent course and was accompanied by a lower mortality. It should be noted, however, that the average duration of life in fatal cases during the epidemic was from six to ten days, and many patients died in from one to three days after the onset of pneumonia, a period of time too short to allow of the development of lesions such as empyema, which ordinarily require a longer time to become clinically evident.

*Blood.*—The infrequency of septicemia accompanying other localizations of streptococci in the body has frequently invited remark. On many occasions, organisms have been recovered from the blood at necropsy which repeated cultures had failed to reveal during life. An exception to this has been found in cases of mastoiditis. In this condition, 30 per cent. of blood cultures have yielded *Streptococcus hemolyticus.* Recently several strains of hemolytic streptococci have been recovered from blood cultures which grew distinctly better at low oxygen tension. Without the routine use of anaerobic plates, one of these organisms would never have been isolated.

7. Nichols, H. T., and Bryan, J. H.: The Tonsils as Foci of Infection, J. A. M. A. **71**: 1813 (Nov. 16) 1918.

*Pericardium.*—Infections of this serous membrane have been encountered in a small proportion of cases. Considering the close topographic relation of the pleura and the pericardium, it has seemed remarkable to find so few extensions from one to the other.

*Peritoneum.*—Peritonitis of streptococcic origin has likewise been a comparatively unusual finding. Several of those discovered were subphrenic localizations. Not a single case of appendicitis out of more than 200 coming to operation has been shown to be produced by *Streptococcus hemolyticus*. In one case, only, of periappendicitis was this organism demonstrated.

*Mastoiditis.*—An unusual number of cases of streptococcic mastoiditis have arisen and have run very acute and stormy courses. Half of these have appeared since the influenza epidemic. About eighty such cases have come to operation. Thirteen per cent. have terminated fatally. Mastoiditis has unquestionably been one of the most serious late complications of influenza. Associated with mastoiditis, sinus and jugular vein thrombosis have been encountered four times each. Two patients developed meningitis and two brain abscesses.

*Wounds.*—Many infected wounds have shown the presence of the hemolytic streptococcus, in a majority of cases in pure culture. On many occasions this organism has occurred following clean operations the technic of which had the most critical scrutiny and laboratory control. Considering the very wide distribution of hemolytic streptococci in so-called normal mouths, such infections are more easily explained.

Among other localizations of streptococci have been cellulitis, arthritis, phlebitis, sinusitis, endocarditis, osteomyelitis, abscess of the thyroid, and abscesses of the kidney. Streptococci have been recovered in large numbers from many cases of tonsillitis. Erysipelas has been a common complication. It has been noted that streptococcic empyemas tend to remain uncontaminated by other organisms over long periods of time. Empyemas originally caused by pneumococci and other organisms have in spite of scrupulous surgical care in dressing later shown hemolytic streptococci, which ultimately were the only organisms recoverable from such cavities.

### SUMMARY

1. Streptococci as observed at Camp Custer have manifested themselves almost uniformly as secondary invaders.

2. It is impossible to divorce a discussion of streptococcic infection from such antecedent diseases as influenza, measles and the acute upper respiratory inflammations.

3. Important factors in the incidence of streptococcic infections and their outcome are disclosed after investigating the effects of length of service, rural and city life, and bodily fatigue and exhaustion.

4. Streptococci have been responsible for a variety of lesions, but their predilection for the respiratory system far exceeds all other localizations.

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**Antitoxin in Diphtheria.**—Depending on the way it is treated, diphtheria is one of the least dangerous or one of the most dangerous diseases. It is one of the least dangerous when promptly treated with antitoxin; it is one of the most dangerous when the antitoxin treatment is not given or is delayed or is insufficient.—Keep Well Series No. 4, U. S. Public Health Service.

## REPORT OF THROAT CULTURES IN MEASLES

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From Oct. 20, 1918, to the present date, a routine throat culture has been made in each case of measles as soon as possible after the patient enters the wards. This was done for the purpose of selecting those patients harboring hemolytic streptococci and isolating them, usually in a separate ward. The cubicle system as used in this hospital undoubtedly offers a large degree of protection against the spread of infection by coughing, but as the sheets are not always properly placed, the special ward was thought to be best. The statistics of these cases were kept to determine what relation was shown between the throat cultures and the complications. The diagnosis of complications was made by the different ward surgeons and the personnel changed from time to time. The presence of pathogenic organisms was determined by various persons of the regular laboratory force, so that their opinions were quite unbiased. This report, therefore, is largely a correlation of the findings of the ward surgeons by physical examination and the reports of the laboratory on the throat cultures.

The tables included show records of 458 cases of measles covering a period of eight weeks, from Oct. 20 to Dec. 13, 1918. The cultures were taken postnasally with a wire swab, bent at right angles, and applied to a small area of a human blood agar plate. The spread was made with a platinum loop wet with a drop of salt solution. From this point the work was taken up by the regular laboratory force. The culture was examined next day and colonies resembling hemolytic streptococci picked and planted in broth. The following day the broth was examined and mixed with an equal amount of 5 per cent. suspension of red blood corpuscles and incubated for not over an hour, to determine the presence of hemolysis. Only those showing this reaction were considered positive. The percentage of positives for hemolytic streptococci varied materially in different weeks, the lowest being 19 per cent. the fourth week, and the highest 45 per cent. the eighth week. It also varied in different wards, the highest percentage being in B-4, where, of the twenty-three cases, there were fourteen positives. This ward was taken over for measles rather unexpectedly and for the first day or two there were no cubicles, which may account for the high percentage of positives. Also, cultures were taken in this ward three times, the first time determining nine positives, the second four more and the third time one more.

The chief interest lies in the relation between the throat organisms and the principal complications, pneumonia and otitis media. Pharyngitis, laryngitis and bronchitis have not been considered as complications but as more properly a part of the disease. While acute tonsillitis occurred not infrequently, it is hard to say whether it was a complication or not since it sometimes came after the patient was convalescent. The presence of bronchopneumonia is sometimes a matter of opinion, but the diagnosis of the ward surgeon was taken in all cases. Cases of otitis media have not been included unless the process went on to suppuration. Mortality statistics are practically com-

plete at the time of writing, as six weeks have elapsed since the last case included in this series was admitted. There have been thirteen deaths in the 458 cases, a mortality of 2.7 per cent. Among the forty-eight pneumonias there have been ten empyemas, the hemolytic streptococcus being the predominating organism, and six of these patients are now dead. From the forty-three cases of suppurative otitis media there have been five cases of mastoiditis. There were also noted three cases of frontal sinusitis and two of peritonsillar abscess and one acute appendicitis. There were two cases of meningitis; one due to the meningococcus, and four carriers were found in this ward. In the other case hemolytic streptococci were found in the spinal fluid and the case went on to a rapidly fatal termination. This case presented a streptococcus otitis media, but at the necropsy there was no evidence of direct extension to the brain. The milder affections of the throat and nose are sometimes mentioned on the diagnosis sheet and sometimes not, and so for the sake of greater accuracy the comparison is made only between the throat organisms and the incidence of pneumonia, with or without empyema and otitis media with or without mastoiditis. The summary of these records is shown in Tables 1 and 2.

TABLE 1.—RELATION OF HEMOLYTIC STREPTOCOCCI IN THROATS TO COMPLICATIONS OF MEASLES

| | Cases Positive for Hem. Strep. in Throats | | Cases Negative for Hem. Strep. in Throats | |
|---|---|---|---|---|
| | No. | Per Cent. | No. | Per Cent. |
| Total number | 122 | | 336 | |
| Pneumonia complicating each group | 13 | 10.6 | 35 | 10.4 |
| Otitis media complicating each group | 11 | 9.0 | 33 | 9.8 |

TABLE 2.—RESULTS OF THROAT CULTURES IN ALL CASES OF MEASLES AND ITS COMPLICATIONS

| | Number | Number Positive for Hem. Strep. | Per Cent. Positive for Hem. Strep. |
|---|---|---|---|
| All cases measles | 458 | 122 | 26.6 |
| Measles complicated by pneumonia | 48 | 13 | 27.1 |
| Measles complicated by otitis media | 43 | 11 | 25.6 |

It will be seen from these figures that in this series of cases pneumonia and otitis media ocurred in the same proportion in the streptococcic and nonstreptococcic throats.

In this connection it is interesting to note that in Ward B-4, where fourteen of the twenty-three patients were positive, there was only one pneumonia and that of a lobar type and no other complications at all.

The great majority of these boys were from the country or small towns as the following figures indicate: men from country, 415; men from small towns, 26; men from cities, 17, or 3.7 per cent.

Each patient was asked if he had ever had measles before, with the following results: never had measles, 385; German measles only, 44; had measles before, 29, or 6.3 per cent. That is to say 96.3 per cent. of the measles cases came from the country and 93.7 per cent. of the patients had not had measles before.

The state from which each patient came was noted and it was found that thirty states were represented as well as the island of Porto Rico. The states represented by more than ten patients were: North Carolina, 134; South Carolina, 95; Florida, 65; New York, 46; Ohio, 16; Missouri, 13. Two thirds of all cases came from the states of North Carolina, South Carolina and Florida. At the camp personnel office it was not possible to obtain exact figures as to the population of the camp by states at this time, but it was stated that at least 60 per cent. of the men at that time were from the North. The average measles patient was then a country boy, working on a farm situated in the Carolinas or Florida.

Experiments with dichloramin-T were carried on in the streptococcus isolation ward by Major Dunham of the Surgeon-General's Office, to see what effect this spray would have in clearing up these throats. There were seventeen patients present, all previously known to harbor streptococci, and cultures were taken again. The patients were sprayed three times and a third culture taken three days after the second. Of the original seventeen cases, ten were found to be positive on the second examination, and after spraying there were nine positive. Four cases positive just before spraying were found to be negative afterward, but three cases negative before were positive after, so that this method of treatment does not promise much against this particular organism.

In presenting these figures, it is understood that one negative culture for streptococci is not final, and if the cultures were taken every day or two the proportion of positives would be somewhat higher. This does not necessarily mean that the throat has become infected in the ward, but that in the finding of positive cultures there is a certain element of chance. A number of the patients had more than one culture and of the 122 streptococcus carriers, eleven were found on subsequent examinations. Streptococci could not be found on every examination, as the cases in the isolation ward show. Of the seventeen carriers just mentioned, four were negative on both the second and third examinations; seven were negative on either the second or third, and only six were positive all three times.

The question might be raised why cultures of the throats were not taken every day or two, since more carriers might be found in this way. The reason for not doing so is that we believe that this would be an injustice to the patients as in these inflamed throats, repeated swabbings could easily stir up dormant trouble.

The figures as they stand reveal that in this hospital there was no relation between the presence of hemolytic streptococci in the throat and the occurrence of complications. This does not accord with the conclusion reached by Levy and Alexander[1] in their work at Camp Zachary Taylor. After seeing this number of cases we believe that plenty of space and abundance of fresh air are large factors in preventing complications, and that whatever may be said of the value of isolation, it cannot take the place of proper treatment.

1. Levy, R. J., and Alexander, H. L.: The Predisposition of Streptococcus Carriers to the Complications of Measles, J. A. M. A. **70**: 1827 (June 15) 1918.

**Typhus as Accident.**—According to the *Nederlandsch Tijdschrift*, the supreme court in Germany decided a case, Oct. 23, 1918, to the effect that the contracting of typhus by a German physician in the exercise of his professional duties at a prisoners' camp, entitled him to the indemnity for which he had been insured against accidents. The court stated that as the fatal typhus had probably been acquired from the bite of a louse, this came under the head of "external injury," but even without this, if the virus had infected through eyes, nose or mouth, the same reasoning as to the infection being an accident would prevail.

# SEROLOGIC CURE (?) IN THE LIGHT OF INCREASINGLY SENSITIVE WASSERMANN TESTS

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Among recent modifications of the Wassermann reaction which are accepted today as adding to the refinement and delicacy of the test are the employment of cholesterin-sensitive antigens and the fixation of the complement under conditions of cold rather than as was originally carried out at 37 C. in the thermostat. In 1912-1913, McNeil,[1] employing comparative tests with incubation at 37 C. and at ice-box temperature, showed an increase of more than 10 per cent. in delicacy of the low temperature over the high. These results were substantiated by Coca and L'Esperance,[2] and in a large series of cases more recently by Smith and MacNeal.[3]

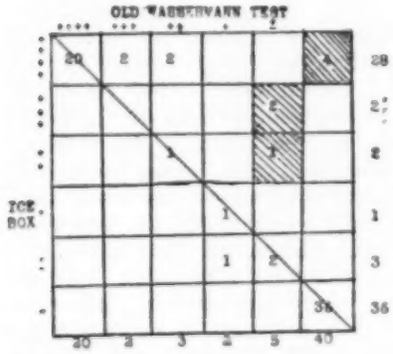


Chart 1.—Primary syphilis: Wassermann reaction in seventy-two cases on admission; shaded figures (seven cases) would have passed as negative with old Wassermann test.

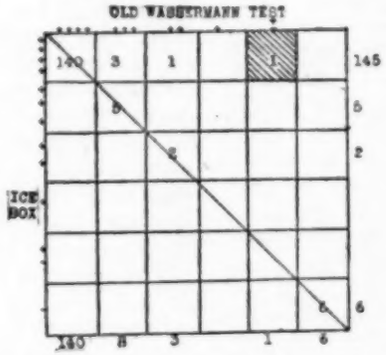


Chart 2.—Secondary syphilis: Wassermann reaction in 158 cases on admission; shaded figure (one case) would have passed as negative with old Wassermann test.

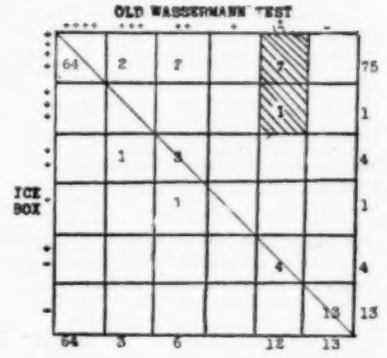


Chart 3.—Tertiary syphilis: Wassermann reaction in ninety-eight cases on admission; shaded figures (eight cases) would have passed as negative with old Wassermann test.

These authors conclude that the use of simple alcoholic antigen with the first incubation carried out in the ice-box is more sensitive in the detection of syphilis than the use of cholesterin-reinforced antigen with incubation at 37 C. or simple alcoholic antigen at 37 C.

During the past eighteen months, comparative tests have been made in the University Hospital on syphilitic and controlled serums with the use of the old Wassermann test, employing cholesterin-sensitive antigens with incubation at 37 C., and the same antigen with incubation at ice-box temperature for sixteen hours. The number of tests carried out under these conditions goes into the thousands. For the purpose of this study, however, we have selected 459 cases of syphilis in all stages, in which, on entrance, a clinical diagnosis was made and in which both tests were done. Of this number, all may be used for the purpose of studying the comparative delicacy of the two tests during the various stages of the disease. In Charts 1, 2, 3 and 4 are tabulated comparative results of the two tests.

In primary syphilis, of which seventy-two cases were admitted, it will be seen by consulting the charts that seven would wholly have been missed if dependence had been placed on the old test. Equally uniform findings in both tests are noted in twenty, four plus positives and thirty-six negatives. Of interest in this group, therefore, are the seven cases in which antibodies were demonstrated earlier in the ice-box than by the older test.

Under secondary syphilis, with lesions in full bloom, there were studied 158 cases (Chart 2). As might be expected, in this group there was great uniformity in the findings; there was only one case which reacted strongly positive to the ice-box and doubtful to the old test.

Under tertiary syphilis, there were studied ninety-eight cases. In this group (Chart 3) it is noticed that eight cases gave a doubtful reaction with the old test and therefore would probably have been passed as negative, whereas they are strongly positive with the ice-box test. Thirteen cases of this group were uniformly negative in both, and sixty-four were positive to the same degree in both.

One hundred and thirty-one cases of syphilis in the latent period are illustrated in Chart 4. It is interesting to note that in this group of cases, seven would have been passed as either negative or cured cases on the basis of the old test, while giving a strongly positive reaction with the more sensitive ice-box test. In this chart is also illustrated a degree of sensitiveness in twenty-eight cases in favor of the cold method.

To sum up, therefore: Of 459 cases of syphilis in all stages, incubation of the serums in the cold was found to be uniformly more sensitive than incubation at 37 C., and of this group of cases twenty-two, or about 5 per cent., would have been deemed nonsyphilitic or cured, if the diagnosis had depended on the Wassermann test as carried out in the thermostat.

Turning now to the cases which we have been able to observe over the period of eighteen months, there are available for close scrutiny only thirty-nine in which we are satisfied that intensive therapy was carried out, and in which repeated tests were made. The treatment instituted in all these cases has been in the form of courses of arsphenamin or neo-arsphenamin, no patient having received less than six injections and

1. McNeil, Archibald: Dept. of Health, City of New York **7**: 325, 1912-1913.
2. Coca, A. F., and L'Esperance, E. S.: A Modification of the Technic of the Wassermann Reaction, Arch. Int. Med. **11**: 84 (Jan.) 1913.
3. Smith, J. W., Jr., and MacNeal, W. J.: J. Immunol. **2**: 75 (Dec.) 1916.

most of those under discussion here having received two such courses, together with intensive mercurialization over a greater portion of the period of observation with inunctions or injections.

From a study of Charts 5 and 6 it will be noted that of thirteen cases of secondary syphilis on admission, in only one case is any difference to be noted in the reaction of the serum in both tests. After treatment, however, it will be noted (Chart 6) that eight cases tested over the period of observation. Of these, on admission (Chart 9) a uniform finding is noted by both tests in all cases. After treatment, however (Chart 10), it will be noted that five cases became negative or doubtful with the old test and thus might have been considered as cured or approaching serologic cure, whereas the ice-box test revealed them as still strongly positive. This chart illustrates, as does Chart 8, the gradual diminution of sensitiveness in the old

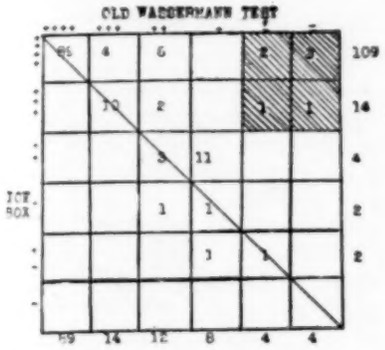


Chart 4.—Latent syphilis: Wassermann reaction in 131 cases on admission; shaded figures (seven cases) would have passed as negative with old Wassermann test.

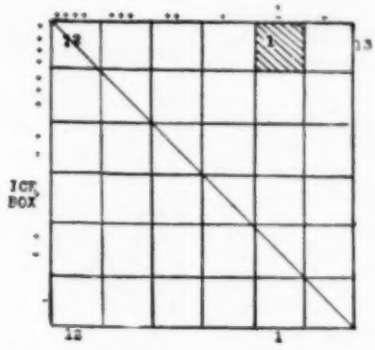


Chart 5.—Thirteen treated cases of secondary syphilis on admission: Shaded figure (one case) would have been considered doubtful on admission on basis of old Wassermann test.

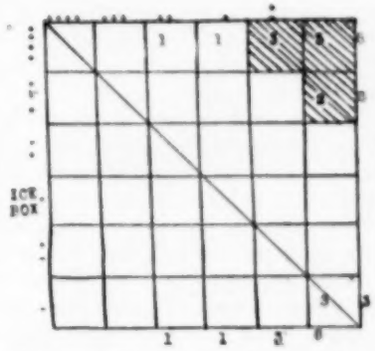


Chart 6.—Thirteen treated cases of secondary syphilis after treatment: Shaded figures (eight cases) would have been considered as cured on basis of old Wassermann test.

became negative or doubtful and have remained so with the old test while still giving a strongly positive reaction to the ice-box test.

In the group of tertiary syphilis cases studied over this period in which treatment has been instituted and the patients have been under careful and frequent observation, there are sixteen cases. Of these (Chart 7), on admission four, by reason of negative tests with the old Wassermann, might well have escaped recognition. These four gave strongly positive reactions in the ice-box. After treatment, however (Chart 8), a great degree of divergence is noted in these cases. Nine became negative or doubtful and would thus be

test in the remaining cases as against practically constant, intensely positive, reactions as shown by the ice-box test.

To sum up, therefore, it would appear to us that in a total of thirty-nine cases, treated over the period of eighteen months, only six cases have become serologically negative with the ice-box test, as against twenty-two, or more than 50 per cent., which became apparently negative with the old test.

The modern methods of carrying out the Wassermann reaction are today, under all conditions, far more sensitive than those which were used in the early days of serologic examination. Each year some refinement

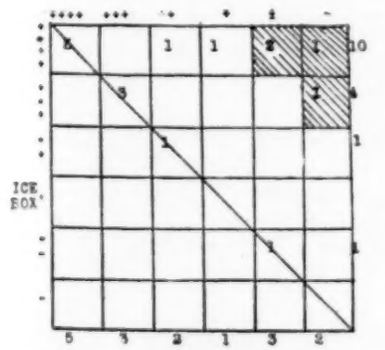


Chart 7.—Sixteen treated cases of tertiary syphilis on admission: Shaded figures (four cases) would have been considered doubtful on admission on basis of old Wassermann test.

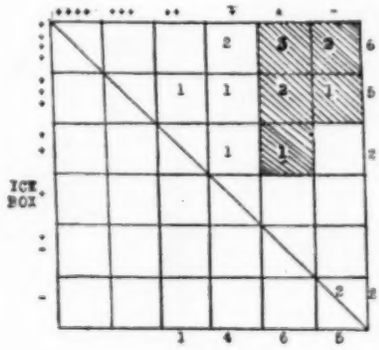


Chart 8.—Sixteen cases of tertiary syphilis after treatment: Shaded figures (nine cases) would be considered as cured on basis of old Wassermann test.

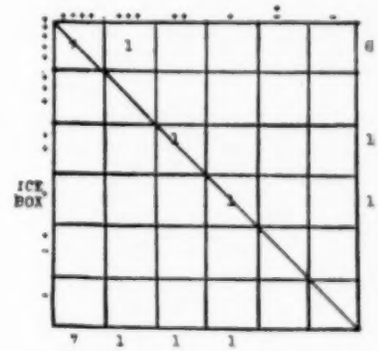


Chart 9.—Ten treated cases of latent syphilis on admission: uniform findings in both tests.

considered as progressing toward serologic cure and by some perhaps cured, whereas all of these still give strongly positive reactions in the ice-box test. A further study of the chart reveals on the part of the five other cases a gradual approach toward the negative phase with the old test, with little or no difference in the intensity of the reaction with the ice-box. Two cases became uniformly negative with both tests.

Of the group of latent cases, only ten were available as having been assiduously treated and frequently

of the technic brings to light more and more positive cases which, under previous conditions, would have been negative, and it seems quite reasonable to us to predict that the last word on the subject is yet far off. It is even justifiable to assume that within a short time a test more sensitive than that carried out in the ice-box may be elaborated.

When one compares the relative sensitiveness of older tests with those employed today, and the ever increasing refinements, it becomes apparent that at best

our laboratory methods are crude means to detect chemical and physicochemical changes taking place in the cells of the body after infection.

As a diagnostic aid, the positive Wassermann reaction still stands as our greatest aid and a tremendous step forward in the uncovering of syphilis. It has long been taught, and until recently we shared with others the belief, that the goal to be attained in the treatment of syphilis is the conversion from a positive to a negative phase in the blood test. We are fast being converted to the view that, excepting in the small group of early cases in which positive tests are never elicited and the cases are aborted, to attempt this end is, as it were, chasing a shadow.

Until more is known about the nature of this reaction, as to whether it is caused by antibodies or immune substances, it seems to us that there is equally less justification to attempt or to expect well established positive cases to become permanently negative.

We are convinced that in the presence of an intensive therapy, a positive test does not necessarily mean living spirochetes and potential syphilis any more than a positive tuberculin test in an individual who has had tuberculosis would indicate the presence of living tubercle bacilli.

With the ever increasing discrepancies reported with each refinement of the Wassermann test; with the ever increasing number of permanently positive cases, previously regarded negative, it appears to us that as a guide to therapeusis, the Wassermann reaction does not have a leg to stand on.

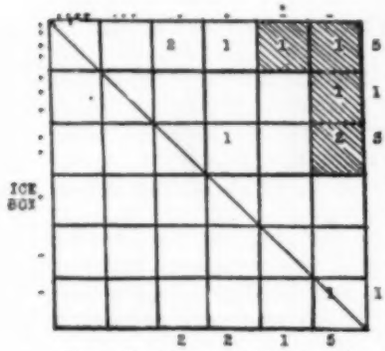


Chart 10.—Ten treated cases of latent syphilis after treatment: Shaded figures (five cases) would be considered as cured on basis of old Wassermann test.

We stand today, with regard to the criteria of the treatment and cure of syphilis, as did the syphilologists of the pre-Wassermann day.

Until recently we have taught, as have all others, and have impressed on patients, that treatment must be continued until the blood no longer shows evidences of syphilis. Undoubtedly we, as all others, have passed, as cured, cases which have been recorded as negative, depending on the degree of delicacy of the test at the time. We do not feel that these cases are necessarily not clinically cured, although modern tests would show many surely as positive.

Whatever intensive treatment has been directed toward the eradication of the Wassermann reaction has undoubtedly been well directed toward the eradication of the disease.

In the light of our real ignorance of the nature of the reaction, particularly in the interpretation of late persistent tests, we submit that serologic and clinical cure are not necessarily parallel. Energy of treatment directed toward the end of attempting to make a persistent positive react negatively may well be not only useless but misdirected.

**The Laborer's Health.**—On the health of the nation depends the efficiency of labor, and the economic value of the laborer is one of the arteries of commerce.—Arthur E. Holder.

# SUGAR TOLERANCE IN CANCER*

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AND
OTTO KREHBIEL, M.D.
NEW YORK

The insidious onset of a malignant tumor with the lack of positive evidence, in the majority of instances, until the case is far advanced, is perhaps the greatest difficulty in the way of a decided reduction in cancer mortality. Certain well established facts of cancer etiology may be briefly stated in order to explain the basis of the experiments of which this paper constitutes a preliminary report.

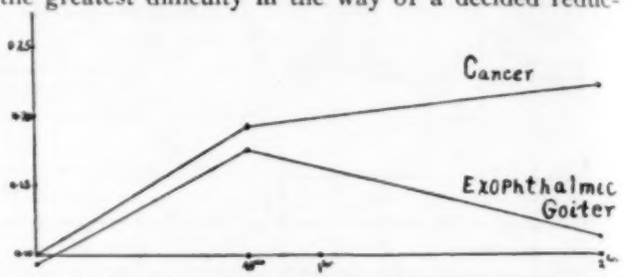


Chart 1.—Comparison of the curve of sugar tolerance in exophthalmic goiter and in cancer. In this and in the subsequent charts the ordinates give the sugar percentages per hundred c.c. of blood, while the abscissas indicate the zero hour, forty-five minutes, and one and two hours, thereafter.

Broadly speaking, the development of malignant tumors rather frequently follows irritation, though no irritant is specific. It is generally accepted that not every one exposed to the action of any given irritant develops a tumor. In other words, there is an apparent predisposition as well as an actual inciting irritant. Again, broadly speaking, since exact statements are not possible in the present state of our knowledge, this predisposition becomes more evident at a certain period in life, a period spoken of as the cancer age, and demonstrable in animals as well as man.[1] Not a few investigators have attributed cancer development to faulty function of the endocrine glands, one or the other gland being held responsible. So far there has been no positive evidence produced that will support this hypothesis. There are no specific lesions demonstrable in the endocrine glands of mice with spontaneous tumors[2] nor does extirpation or the feeding of one or more of these glands have any apparent influence on the rate of growth, infectivity, or immunity against animal tumors.[3]

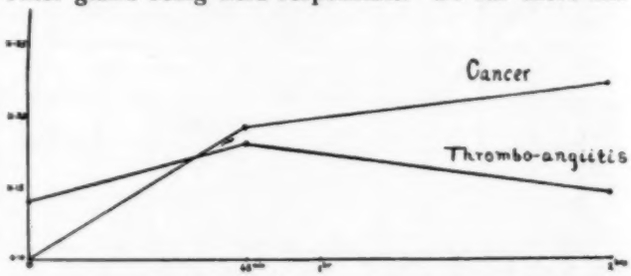


Chart 2.—Comparison of the curve of sugar tolerance in thrombo-angitis and in cancer.

* From the Pathological Laboratories of the Lenox Hill Hospital.

1. Murray: Proc. Roy. M. & Chir. Soc., Series B, **84**: 42, 1911-1912. Slye: J. Cancer Res. **1**: 479, 1916.
2. Rohdenburg and Bullock: J. Med. Res. **33**: 147, 1915.
3. Rohdenburg, Bullock and Johnson: Reports of George Crocker Special Research Fund **3**: 87, 1913.

Nevertheless, it is possible that there may be derangement of endocrine function not demonstrable by histologic or surgical technic. The functional activity of some of the endocrine glands can, to some extent, be measured by the sugar tolerance test first brought into clinical use by Jacobsen[4] in 1913. With this method Janney and Isaacson[5] have demonstrated that the removal of the thyroid in dogs is followed by a hypoglycemia. Other clinicians have applied the test in a variety of conditions, among which may be mentioned diabetes, nephritis, exophthalmic goiter, pituitary disease, myxodema and thrombo-angiitis obliterans. In some of these diseases typical curves of no inconsiderable value in diagnosis have been established though unfortunately not applied clinically with the frequency which the importance of the data so obtained warrants.

Following the method as outlined in a succeeding paragraph we have obtained values apparently constant in cancer, which may ultimately prove of value in diagnosis. It is for this reason that a preliminary report is made.

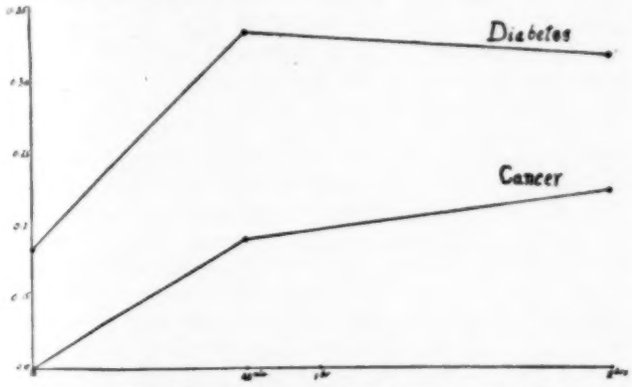


Chart 3.—Comparison of the curve in diabetes and in cancer. Note that the diabetic curve starts at a higher point and commences to fall at the second hour, whereas the cancer curve does not.

## TECHNIC OF THE TEST

In the morning, after a night's fast, the individual is given either 100 gm. of anhydrous or 115 gm. of syrup glucose dissolved in 300 c.c. of tea or coffee without milk or sugar, care being taken that the glucose is all dissolved and that the patient takes the entire amount. Just before giving the glucose, and again forty-five minutes and two hours after its ingestion, blood is withdrawn and the amount of sugar in it is determined by the method of Lewis and Benedict as modified by Meyers. At the same time periods the urine is qualitatively examined for sugar by the method of Benedict.

The epinephrin method may also be employed by giving 1 c.c. of a 1 : 1,000 solution of epinephrin hydrochlorid subcutaneously instead of administering glucose. All other manipulations are identical with the glucose procedure.

The normal curve of sugar tolerance as well as the curve in some diseases other than cancer is graphically portrayed in Charts 1, 2, 3 and 4 and needs no amplification here.

The cancer curve in contrast to the curve observed in other diseases starts with a normal blood sugar, 100 mg. per hundred c.c. of blood; rapidly rises so that forty-five minutes after the ingestion of glucose 180 or even 200 mg. per hundred c.c. are present, and two hours after the glucose is ingested the blood sugar is either as high as at forty-five minutes or higher, reaching 288 mg., and in one instance 350 mg. per hundred c.c. of blood. The percentage of blood sugar gradually falls and approximates normal in from three to four hours after the ingestion of the glucose. The average of four curves in which specimens of blood were taken up to three hours is shown in Chart 5. This curve was present in our limited experience in twenty-four cases of carcinoma and one of sarcoma

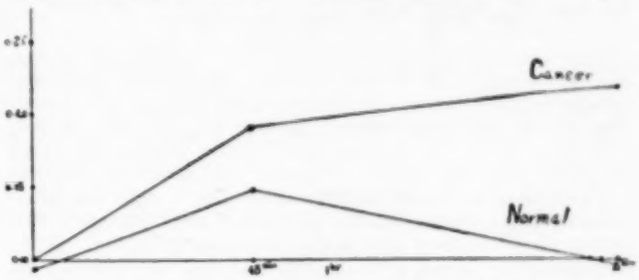


Chart 4.—Comparison of the cancer curve with the curve in normal individuals.

and does not occur in some forty cases of other diseases which we have examined. The curve covering the use of epinephrin instead of glucose is identical with the curve following the ingestion of glucose.

The sugar present in 100 c.c. of blood at the zero hour and at forty-five minutes and two hours after ingestion of glucose as it occurred in twelve cases is presented in the accompanying table. The sugar tolerance bears no relation to the location of the tumor, for primary carcinoma of the lung, carcinoma of the sigmoid, of the stomach, and of the breast and other organs, all give the same type of reaction.

Even with the high blood sugar present in these cases, sugar appeared in the urine rather infrequently, only 41 per cent. of the cancer cases showing sugar.

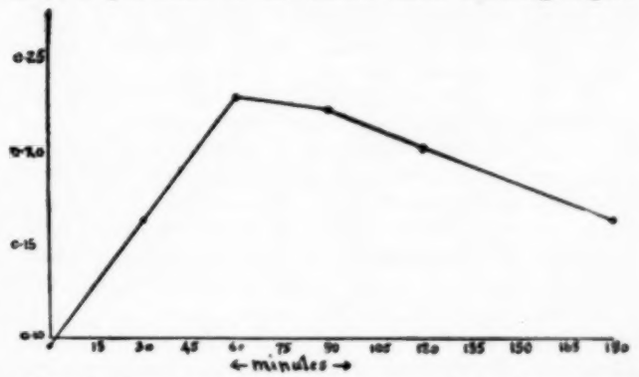


Chart 5.—Cancer curve based on four cases. The abscissas indicate the time period in minutes.

The value of the test is well shown in two of the cases of the series. Others could be quoted but these serve the purpose:

CASE 1.—A man, aged 47, about three years before admission to the hospital had, without apparent reason, commenced to cough, having had no previous pneumonia, pleurisy, nor other pulmonary condition. This cough persisted. In one hospital a diagnosis of probable lung abscess was made, possibly because of the type of sputum and the accompanying temperature. This abscess was thought to be possibly of tuberculous nature, though this could not be positively asserted. He then went to a sanatorium for tuberculosis where the diagnosis of bron-

4. Jacobsen: Biochem. Ztschr. **56**: 471, 1913.
5. Janney, N. W., and Isaacson, V. I.: The Blood Sugar in Thyroid and Other Endocrine Diseases, Arch. Int. Med. **22**: 160 (Aug.) 1918.

chiectasis was made. He was then referred to Dr. Willy Meyer for operation. An exploratory puncture of the supposed bronchiectasis was made and pus was found. Operation immediately followed puncture and a pus sac was drained. Previous to puncture, roentgenograms showed a thickened pleura. The sugar tolerance curve was characteristic of tumor. The patient survived operation three days. At necropsy an adenocarcinoma arising from the bronchial epithelium was found. The tumor measured approximately 5 cm. in diameter and partially compressed the bronchi of the right lung, causing aneurysmal dilatation of the bronchi.

In contrast to this case, a second would appear to illustrate the value of a negative curve:

CASE 2.—A woman, aged 55, gave a typical history of gastric carcinoma situated at the pylorus. A roentgenogram disclosed almost complete obstruction at the pylorus and according to the roentgenographer a new growth was present extending from the pylorus toward the cardia, involving approximately the distal third of the stomach. Gastric analysis showed no hydrochloric acid. Lactic acid was present and Boas Oppler bacilli and blood were present. The sugar tolerance curve was that of a normal individual. After operation the blood gave a Wassermann ++++. At operation, the entire pylorus, as well as the involved portion of the stomach wall, was resected. Microscopic examination failed to show any evidence of cancer, but did show a typical gumma and the perivascular round-cell infiltration of syphilis. Spirochetes were not demonstrable.

SUGAR PRESENT AT VARIOUS TIME PERIODS BEFORE AND AFTER INGESTION OF GLUCOSE

| Diagnosis | Blood Sugar | | | Urinary Sugar | | |
|---|---|---|---|---|---|---|
| | Before Glucose | After Glucose | | Before Glucose | After Glucose | |
| | | 45 Min. | 2 Hr. | | 45 Min. | 2 Hr. |
| | % | % | % | % | % | % |
| Carcinoma of stomach.... | 0.120 | 0.144 | 0.232 | 0 | 0 | 0.3 |
| Carcinoma of stomach.... | 0.108 | 0.228 | 0.288 | 0 | 0 | 2.0 |
| Carcinoma of stomach.... | 0.114 | 0.240 | 0.272 | 0 | 0 | 0 |
| Carcinoma of stomach.... | 0.106 | 0.100 | 0.192 | 0 | 0 | 0.9 |
| Carcinoma of uterus..... | 0.138 | 0.174 | 0.164 | 0 | 0 | 0 |
| Carcinoma of sigmoid..... | 0.123 | 0.158 | 0.189 | 0 | 0 | 0 |
| General carcinomatosis .. | 0.096 | 0.204 | 0.215 | 0 | 0 | 0 |
| Carcinoma of stomach.... | 0.116 | 0.168 | 0.230 | 0 | 0 | 0 |
| Carcinoma of stomach.... | 0.078 | 0.215 | 0.210 | 0 | 0 | 0 |
| Carcinoma of esophagus.. | 0.082 | 0.160 | 0.220 | 0 | 0 | 0.7 |
| Carcinoma of stomach.... | 0.120 | 0.240 | 0.156 | 0 | 0 | 0 |
| Carcinoma of stomach.... | 0.106 | 0.275 | 0.245 | 0 | 0 | 1.0 |
| Sarcoma of femur..... | 0.980 | 0.170 | 0.220 | 0 | 0 | 0 |

We prefer for the present not to theorize on the etiologic significance of the phenomenon so far observed; the possibilities are numerous, and theoretically one explanation is as good as another, nor shall we at this time venture an explanation of the mechanism of the occurrence, contenting ourselves rather with recording the phenomenon so that repetition in other hands than ours may more rapidly prove or disprove its value as a diagnostic test.

**Defective Development of the Blood.**—Pittaluga's term, "hemodystrophies," has been widely adopted to indicate defective formation of blood and the evils resulting therefrom. The biochemical alterations may predominate over the histopathologic, and there may be a more or less accentuated neuropathic factor, direct or indirect, through the mediation of the glands of internal secretion. Hereditary or familial factors may intervene directly or indirectly. Purpura, hemophilia, hemolytic jaundice, hemoglobinuria and the hemorrhagic diathesis can all be classed in the four main groups of the hemodystrophies: those with a hemorrhagic diathesis, with a tendency to polycythemia, to chlorosis, and the diathesis showing a tendency to eosinophilia. As he describes in the *Siglo Medico*, Nov. 16 and 23, 1918, pp. 939 and 956, these hemodystrophies reveal an intimate connection between the blood-producing organs and the endocrine system, and show the important part played by heredity.

# THE NOSTRUM AND THE PUBLIC HEALTH *

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CHICAGO

Broadly speaking, the nostrum belongs in one of two general classes; one class comprises those unscientific mixtures that are advertised primarily to the medical profession, and first reach the public by way of the prescription; the other class includes those mixtures that are sold direct to the public. Nostrums in the first class are sometimes spoken of as "proprietaries"; those in the second class are colloquially known as "patent medicines." The public suffers from both classes, the only difference being that in the case of the former the physician has to share the responsibility with the nostrum exploiter. There is no clearly defined line of demarkation between these two classes. Many of the "patent medicines" of today were the "proprietaries" of yesterday. Shrewd manufacturers—or, more correctly, exploiters, for many of these products are not manufactured by those that sell them—discovered years ago that one of the least expensive methods of introducing a nostrum to the public was by way of the medical profession. After the profession had been widely circularized and much space bought in the advertising pages of medical journals of a certain type; after uncritical or unthinking physicians had prescribed the products (of course in the "original package" with the name blown in the bottle or a monogram stamped on the tablet); after the patient had learned with disgust that his physician had merely prescribed a "patent medicine" that could more cheaply have been purchased direct—then the one-time "proprietary" threw off its "ethical" mask and became frankly a "patent medicine." Such has been the genesis of many a "patent medicine" on the market today. Others, less deviously, have gone directly to the public at the outset.

## FEW, IF ANY, REAL PATENT MEDICINES

The present paper deals with the "patent medicine" evil. Correctly speaking, there are practically no true patent medicines on the market; first, because few if any of the products of this type could be patented, and second, because patency or openness is the last thing the average "patent medicine" seller wants. Mystery and secrecy are his great assets. A product to be patentable must, according to the law—not always enforced, by the way—represent something new and useful; and this requirement of the patent law rules out the "patent medicine." A patent when granted gives the owner a legal monopoly on his product for seventeen years, after which time the product becomes public property. The "patent medicine" seller finds it easier and far more profitable to put together a simple mixture of drugs that represents nothing either new or useful, to which he gives a fancy name, and obtains a trade-mark on that name. The trade-mark gives him a perpetual monopoly to the name and places no restrictions on the composition of the product; nor, in the granting, is he required to give any information regarding its composition.

Thus "Winslow's Soothing Syrup" is still "Winslow's Soothing Syrup" in name, although the product

* Read before the Chicago Medical Society, March 26, 1919.

on the market today bears but little resemblance to the original preparation sold under that name. As sold in the United States, it used to contain morphin and alcohol. As sold in Great Britain, potassium bromid was substituted for morphin because the British law requires the word "poison" on all "patent medicines" containing morphin. As the public in our country became aroused to the menace of the "baby killers," many drug stores refused to handle the Winslow preparation. Then the formula was changed, and changed again, so that today it contains neither morphin nor alcohol. But it is still "Winslow's Soothing Syrup."

### THE FOOD AND DRUGS ACT

There has been a tendency during the past few years to assume that the federal Food and Drugs Act, commonly known as the Pure Food Law, effectively safeguards the public against the menace of the nostrum. Although this law has been in force for more than twelve years, there is still some misapprehension of its powers and limitations. First it should be realized that the law applies only to products that enter into interstate commerce; that is, those that are made in one state and sold in another. The federal Food and Drugs Act, for instance, exercises no control over the sale of "patent medicines" made in Illinois and sold anywhere within the state of Illinois, no matter how fraudulent the claims may be as to therapeutic effects, composition, or source of origin. The only way such preparations can be reached is under the state law.

It should also be realized that the Food and Drugs Act has no jurisdiction over claims made for foods or drugs except as those claims appear in or on the trade package. When the law was first passed, many "patent medicine" makers assumed that the term "label," as used in the Act, applied solely to the piece of paper pasted on the bottle. On this assumption, they modified the false claims they had been making on the label but continued to falsify in the circulars that were wrapped around the bottles. They soon found to their cost, however, that the courts gave a broader and more logical meaning to the word "label," including all of the printed matter in or on the trade package. The Food and Drugs Act exercises no control over statements that are published separate from the trade package—such as in newspapers, hand-bills, etc.

The Pure Food Law, as first enacted, prohibited, within the field it covers, "false or misleading" statements "in any particular." The officials entrusted with the enforcement of the Act assumed that this meant just what it said, and the majority of the "patent medicine" makers followed that assumption. Then the Supreme Court decided (in a divided opinion) that the law as it stood did not apply to statements regarding curative effects, but only to statements relative to composition and origin. This decision, of course, let down the bars immediately to the most obvious frauds. The more unscrupulous "patent medicine" makers care little about restrictions regarding the composition of their nostrums; they are much more concerned with being free under the law to make any assertion they see fit regarding the curative effect of their preparations. Then came the Sherley amendment to the Food and Drugs Act, which specifically prohibits "false and fraudulent" statements regarding the curative effects of medicines. It is to be noted that falsehood alone is not sufficient to secure conviction; the manufacturer must also be found guilty of deliberate intent to defraud.

Under the Food and Drugs Act, then, the manufacturer of a medicinal product may be declared guilty of misbranding, if the statements he makes (on the trade package) regarding the composition or the origin of his products are either "false or misleading"; he may also be found guilty of misbranding if the statements he makes (also, on the trade package) regarding the curative effects of his preparations are both "false and fraudulent."

Limiting the scope of the application of the law to the claims made on the package, is one of the fundamental weaknesses of the Food and Drugs Act. The law does not penalize the most outrageously false claims of any kind or description regarding "patent medicines," if those claims appear in newspaper advertisements, circulars, etc., that do not accompany the trade package. Yet it is the newspaper advertisement or the circular that sells the product, rather than the matter on the trade package, which the public does not see until after it has purchased. Thus we have the anomaly of a law which allows a manufacturer to lie to his heart's content in those avenues of publicity in which lying will be most profitable and do the maximum amount of harm, and restricts merely the statements he may make in his trade packages. This limitation in the Food and Drugs Act furnishes a sure way of determining with almost mathematical accuracy what statements regarding a "patent medicine" are false: From the claims made in the newspaper advertisements and circulars subtract those that are made in the trade package; the difference, you are justified in assuming, is falsehood!

### LIMITED FORMULA DISCLOSURE

The "Pure Food Law" has one more power in protecting the public against the nostrum evil: It requires "patent medicine" sellers to declare (on the trade package only) the presence and amount of eleven drugs and their derivatives: alcohol, morphin, opium, cocain, heroin, alpha-eucain and beta-eucain, chloroform, cannabis indica, chloral hydrate and acetanilid. Further than this, the law permits the manufacturer to maintain complete secrecy regarding the composition of his preparation. He can, if he wishes, put in his product such deadly poisons as carbolic acid, arsenic, strychnin, prussic acid and aconite, and the public is none the wiser.

Many people have thought that the legend "Guaranteed under the Food and Drugs Act" that used to appear on bottles and cartons indicated that the federal government had in some way passed on the product and given it a clean bill of health. Nothing of the kind. Before the guarantee clause was abolished, any manufacturer could write into Washington and ask for a serial guarantee number, and Washington had no choice but to issue such a number—this, no matter whether the medicinal product was good, bad or indifferent, whether the claims under which it was sold were truthful or false or whether the drugs it contained were harmless or dangerous. All that the guarantee clause ever meant was that were the product sold in violation of the law, the person to whom the guarantee serial number had been issued would be held responsible, rather than the individual retailer. Some of the most outrageous swindles in the "patent medicine" world have been "Guaranteed

under the Food and Drugs Act." Summed up, then, it may be said that the federal Food and Drugs Act gives the public a certain measure of protection. It permits the public to know the names and amounts of eleven drugs and their derivatives, and it limits the claims that can be made for these products, so far as such claims appear in or on the trade package.

### THE PHYSICIAN'S INTEREST IN THE NOSTRUM EVIL

The nostrum evil is essentially a public health question, although, as in the case of many public health questions, it has its economic angle. The "patent medicine" maker persistently charges that the medical profession's opposition to "patent medicines" as now exploited is based on the assumption that the sale of such products diminishes the income of the physician. The charge, of course, is as malicious as the assumption is false. Next to the "patent medicine" men and the newspapers that share the profits of nostrum exploitation, no class receives greater financial benefit from "patent medicine" advertising than physicians. A hundred people see an advertisement of "Doan's Kidney Pills," with its "Every Picture Tells a Story" illustration conveying the impression that an ache or pain in the lumbar region indicates kidney disease. Out of this hundred, let us suppose one half, because of some passing pain in the lumbar region, are convinced that they have Bright's disease or some kidney ailment. Of the fifty thus frightened into the belief that they are ill, it may be conservatively claimed that considerably more than half will go to their family physician rather than to the drug counter. If all "patent medicine" advertising were abolished tomorrow, next to the exploiters of "patent medicine" and some newspaper proprietors, no one would suffer larger financial loss than the physician. The physician, of course, is opposed to the average "patent medicine" because it is exploited in such a way as to cause the public to magnify its trivial ailments, to drug itself unnecessarily and in cases in which something serious is the matter to lose vitally valuable time in seeking medical aid. Were the physician's attitude toward "patent medicines" prompted by commercial considerations he would say to the nostrum exploiter, "Go the limit; the more victims you get, the more patients I get!"

### AN ECONOMIC EXCUSE FOR HOME REMEDIES

Under our present economic system there is a place for home remedies for the self-treatment of simple ailments. It may be that in Utopia the ailing always go to their medical advisers, no matter how trivial the ailment; but this is not Utopia. No one expects every person who suffers from a passing attack of constipation to go to his physician for a prescription. He is going to the drug store for a cathartic of some kind. Admitting that the abuse of cathartics is one of the most widespread and pernicious of the evils of self-drugging, and admitting, further, that the rational treatment of constipation may not call for any purgative drug, the fact remains that in such cases the man in the street is going to take cathartic drugs, at least until he is better informed. The duty of the medical profession in the premises is to warn the public of the danger of the purgative habit and to urge that some restrictions be thrown around the sale of cathartic medicines. The same applies to the use of other medicinal products that may rightly be classed as home remedies.

Unfortunately, the home remedies of today are, generally speaking, "patent medicines"; and the methods of promoting the sale of "patent medicines" make those products a menace to the public health. This not altogether for what the remedies themselves contain, although in many instances that is distinctly bad, but because of the way such products are exploited. Modern advertising differs from that of the mid-Victorian era in one vital respect. In the earlier days the advertiser notified the public where demands might be supplied. Today the advertiser bends his efforts toward making the public demand things which otherwise it would not want or even know about. This principle may have no serious consequences, other than economic at least, when applied to the ordinary commodities of commerce. There may be more or less plausible arguments in favor of so advertising pianos, automobiles, clothes, or what not, as to persuade the public to purchase more of these articles than it really needs or can afford. There can be no excuse, however, for using such methods in the sale of preparations for medicinal purposes. So to advertise as to make well men think they are sick and sick men think they are very sick, for the sole and only purpose of causing them to purchase drugs to pour down their throats, is more than an economic offense; it is a crime against the public health. Yet this is the principle on which the average "patent medicine" of today is sold.

### SEQUENCE MISTAKEN FOR CAUSE AND EFFECT

There is an additional reason why the present method of exploiting drugs for the self-treatment of disease is vicious. In the sale of medicaments, we have a class of merchandise that lends itself peculiarly to fraudulent exploitation. The nonexpert who is led by misrepresentation to purchase a piano or a suit of clothes which is not up to the specifications learns sooner or later that he has been swindled, and he profits by the lesson. There is no such automatic check operating in the case of medicaments. John Smith gets up some morning feeling sick. It is but a passing indisposition and in a few days he will be himself again, whether he does something or does nothing in the way of treatment. In opening his morning paper, John finds, carefully detailed, just the symptoms that he seems to have, and he is assured that they may be cured by taking "Pink Pills," "Nuxated Iron," "Tanlac," "Peruna" or what not. On his way down town he buys one of these preparations. In a day or two he is well again—as he would have been in any case—and you never can persuade him that his recovery was due to the healing power of nature and not to the preparation that he had been taking. It is equally true, of course, that had he gone to his family physician and received a prescription or had gone to an osteopath and had his back rubbed, or called up a "Christian scientist" and received an absent treatment, he would also have been willing to credit any one of these agencies with his recovery. The point to be emphasized is that it is a very human tendency to credit to artificial agencies all results that are really due to natural causes. The *post hoc, ergo propter hoc* mode of reasoning is well-nigh universal, especially among those without scientific training. Even we of the medical profession are not altogether free from

confusing a mere sequence of events with cause and effect. Here, then, is the reason for urging that in selling medicinal products a different method should be employed from that used in selling ordinary merchandise. The seller of general merchandise has nature as an opponent; wear and tear is constantly against him. The seller of medicaments always has nature as an assistant. The tendency of the human body in sickness is, in the majority of instances at least, to get well; but the healing power of nature seldom receives credit.

### THE REMEDY

What, then, is the remedy? Obviously there should be home remedies available that are unobjectionable from the public health point of view. Such products should contain no habit-forming or dangerous drugs; they should not be recommended for diseases that are too serious for self-treatment; they should be nonsecret because the public has a right to know what it is taking; finally, they should not be advertised under false claims or in such a way as to make the public magnify trivial ailments and dose itself unnecessarily with drugs. Products which conform to these requirements are to be found on the shelves of every drug store in the country. They comprise certain simple official products from the United States Pharmacopeia or the National Formulary. Naturally, they are nonsecret, and being official, their standards of strength and purity are constant and enforced by state and national laws.

As most of the large pharmaceutical houses in the country make them, the element of monopoly is removed, and competition assures their being sold at a reasonable profit. The enormous overhead expense inseparable from the modern method of "patent medicine" exploitation is entirely eliminated. John Smith does not realize that when he pays a dollar for "Dr. Quack's Panacea," at least 75 cents of his dollar represents the cost of the effort on the part of Dr. Quack to convince Smith that there is something seriously wrong with him and that "Quack's Panacea" is the only thing that will cure him. In other words, Smith pays a dollar for 25 cents' worth of drugs and service, plus the privilege of being frightened into the belief that he is seriously sick and that these drugs are essential to his recovery.

Since official drugs, i. e., Pharmacopeial and National Formulary preparations, are nonproprietary, the chief incentive to fraudulent or misleading advertising claims is removed. John Doe & Sons' brand of Blaud's pills, differs in no essential respect from the Blaud's pills of Henry Rowe & Co. The margin of profit on the sale of Bland's pills is so small that it would hardly be profitable for one manufacturer to attempt any widespread advertising campaign for the special purpose of increasing the sale of his particular brand, even supposing it were possible for him to make claims that could not demonstrably be proved false.

When the public is properly informed, so that it knows what preparations to call for in order to treat its simpler ailments, advertising of home remedies will be entirely unnecessary. It devolves on the medical profession, and other agencies entrusted with the solution of public health problems, to give the public just these facts. In an article published two or three years ago,[1] Dr. Harvey W. Wiley suggested that the American Medical Association should appoint a representative committee to select a few simple home remedies for what he called the "Mother's Medicine Chest," which could be used by the public for the self-treatment of the milder ailments. He urged, further, that somewhat complete directions should be published, describing the nature of the troubles in which these remedies were to be used, and the amount that was to be given under various conditions, in every case, of course, calling attention to the potential dangers inseparable from self-diagnosis and self-treatment. Whether such a task should be undertaken by a scientific organization such as the American Medical Association, or by governmental agencies such as the United States Public Health Service, is a question. There is little doubt, however, that when such information has been widely disseminated, even if it takes a generation to do it, the making of hypochrondriacs by suggestion, and the widespread evil of unnecessary drugging, will be gone. Gone, too, will be the business of those nostrum exploiters who capitalize human fear and fatten on human credulity.

1. Wiley, H. W.: The Mother's Medicine Chest, Good Housekeeping, October, 1916.

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## THE COST OF MALARIA

### A STUDY OF ECONOMIC LOSS SUSTAINED BY THE ANDERSON-COTTONWOOD IRRIGATION DISTRICT, SHASTA COUNTY, CALIF.

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I here present a summary of a detailed report that I made to the California State Board of Health, March 1, 1919, concerning the prevalence of malaria in the Anderson-Cottonwood Irrigation District, situated in Shasta County, Calif. The summary presents data as to the economic loss caused by malaria in this district in 1918. The three items of medicine, medical service and labor loss were carefully determined, and were found to average not less than $31.70 per family: in different sections of the district this varied from $1.86 to $75.10 per family per year.

### DESCRIPTION OF THE DISTRICT

The Anderson-Cottonwood Irrigation District comprises approximately 32,000 acres of valley and foothill land lying on both sides of the Sacramento River in Shasta and Tehama counties, in the northern part of California. The population of the district is approximately 1,300 persons, of whom approximately 450 live in Anderson town, 200 in Cottonwood town, and the remainder, 650, on farms. The irrigation district was organized in 1914, and the irrigation system was sufficiently complete in 1918 to irrigate the northern half of the district (Anderson and Churn Creek sections) early in that year, and some water reached the southern part (Cottonwood section) late in that season. The water is obtained from the Sacramento River, at head-works located in the town of Redding, and is carried in an open, unlined earth main canal and laterals. The soil varies from loam to gravelly loam; the main canal is located very largely in a porous, open, gravelly loam, for much of its length on a sidehill. As a result, there is a very considerable seepage loss. This seepage from the main canal and laterals has greatly increased existing wet areas, and has caused many new seepage pools and marshes.

### PRESENCE OF ANOPHELINE MOSQUITOES

Inspection has shown that these wet areas are ideal for the breeding of anopheline mosquitoes: in fact, *Anopheles* is the dominant species in this district. Very few places in which *culicines* breed were found. Observations made in previous years as well as in 1918 have shown that *Anopheles quadrimaculatus* is present, and probably *A. punctipennis*. I have not found *A. pseudopunctipennis*. Except in unusual years, mosquitoes did not prove troublesome to the inhabitants until the introduction of irrigation in 1918. Last year practically every one in the irrigated sections complained bitterly about the mosquitoes, and in many places their presence seems to have made life nearly unendurable.

### PRESENCE OF MALARIA

Data in my possession seem to show that malaria was present in this part of Shasta County as far back as the early settlement in 1850. Three deaths from malaria were recorded in the county in 1873 (the first county record). There is a gap in the record until 1890, when deaths were again recorded; since 1906, the exact location of death has been entered on the record, and the deaths from malaria in this district were: in 1906, five; 1907, one; 1910, one; 1911, one; 1912, two; 1915, one; 1917, one; and 1918, six.

There is no record of the number of malaria cases in the district in past years. Although the regulations of the state board of health require that malaria be reported, this regulation is not enforced.

### FINANCES OF THE DISTRICT

Realizing that the introduction of irrigation would mean a tremendous increase in malaria, already endemic in this district, I made studies in 1918 to determine the facts as basis for control recommendations. Because of the financial condition of the district, a special investigation into the economic loss caused by malaria was made.

The financial aspect of the matter may best be understood when it is known that the district, assessed at $1,538,180.47 in 1918, was bonded for $1,055,000 for the construction of the irrigation system. The irrigation district tax rate in 1918 was $7 on each $100 of assessed valuation, this tax being in addition to county and school taxes. To add an additional tax for malaria control, on top of this already heavy tax burden, would need evident justification if it were to be voted by the people.

### METHOD OF INVESTIGATION

In making the investigation, practically every house in the district was visited, and data were obtained from approximately 80 per cent. of the families. Especial care was taken in every case to underestimate, rather than exceed, the probable cost of malaria to the family; large items were checked by corroborative evidence whenever possible. Owing to the conservatism of the investigation, it is practically certain that the costs obtained are less than the actual facts rather than in excess of them. Care was also taken in estimating the number of cases of malaria: many probable chronic cases which exhibited no definite symptoms in 1918 were not included. The investigation included only those items in the total cost of malaria (medicine, medical service and labor loss) which could be ascertained with some degree of certainty.

The item of medicine includes quinin, calomel, prescriptions and "patent medicines" purchased direct by the patients. The item of medical service includes physicians' fees, nurses' hire, hospital expense, and medicine dispensed directly by the attending physician. The item of labor loss includes only the labor loss of the head of the household or other wage-earning member of the family, charged at the prevailing local wage scale of $4 a day. It does not include casual farm labor, as this fluctuated greatly, and comparatively few farm casuals were in the district at the time of investigation (November, 1918, to January, 1919).

### TABLE OF COSTS

In the table of costs herewith presented, the district is divided into six sections or groups; Anderson town, Anderson section (west side of the Sacramento River), Churn Creek section (east side of the Sacramento River), Ball's Ferry section (southeastern end of district), Cottonwood town, and Cottonwood section (southwestern end of district). The first three sections comprise the northern half of the district, and were under irrigation in 1918. The last three sections comprise the southern half of the district. Irrigation water reached a limited area in this part of the district late in the 1918 season.

SUMMARY OF MALARIA COSTS IN 1918, ANDERSON-COTTONWOOD IRRIGATION DISTRICT, SHASTA COUNTY, CALIF.

| | Anderson Town | Anderson Section | Churn Creek Section | Ball's Ferry Section | Cottonwood Town | Cottonwood Section | Entire District |
|---|---|---|---|---|---|---|---|
| No. of families | 94 | 75 | 19 | 12 | 46 | 14 | 260 |
| No. of persons | 379 | 316 | 98 | 54 | 176 | 58 | 1,081 |
| Persons having malaria symptoms in 1918 | 254 | 207 | 60 | 32 | 25 | 12 | 590 |
| Percentage having malaria symptoms in 1918 | 67.0 | 66.5 | 61.0 | 59.0 | 14.0 | 20.0 | 54.5 |
| Persons per family | 4.03 | 4.21 | 5.16 | 4.5 | 3.8 | 4.14 | 4.16 |
| Cost of medicines | $504.25 | $736.75 | $117.00 | $52.00 | $56.50 | $14.00 | 1,480.50 |
| Per family | 5.36 | 9.82 | 6.16 | 4.33 | 1.23 | 1.00 | 5.70 |
| Cost of medical service | 359.00 | 1,220.00 | 79.00 | 69.00 | 100.00 | 12.00 | 1,839.00 |
| Per family | 3.83 | 16.28 | 4.16 | 5.75 | 2.18 | 0.86 | 7.10 |
| Labor loss* | 948.00 | 3,684.00 | 218.00 | 60.00 | 0 | 0 | 4,910.00 |
| Per family | 10.10 | 49.10 | 11.48 | 5.00 | 0 | 0 | 18.90 |
| Cost of malaria in 1918 (for three items given above) | 1,811.25 | 5,640.75 | 414.00 | 181.00 | 156.50 | 26.00 | 8,229.50 |
| Per family | 19.29 | 75.10 | 21.80 | 15.08 | 3.41 | 1.86 | 31.70 |
| Per person | 4.79 | 17.80 | 4.23 | 3.35 | 0.89 | 0.45 | 7.66 |
| Per person sick | 7.64 | 27.20 | 6.90 | 5.66 | 6.27 | 2.17 | 14.05 |

* Labor loss is given for the wage-earning members of a family; casual labor is not included. The wage base is $4 a day.

An examination of the table discloses these salient facts:

1. Approximately half (54.5 per cent.) of the population of the district had malaria in 1918. The variation ranged from two out of every three persons (67 per cent.) in Anderson town and Anderson section, to one in every seven persons (14 per cent.) in Cottonwood town. The least malaria appeared where there was the least irrigation.

2. Labor loss, on the average, is the most important direct economic loss caused by malaria, with the cost of medical service second, and medicine third.

3. The cost of malaria due to the three items of medicine, medical service and labor loss averaged $31.70 per family, $14.05 per person sick, and $7.66 per person. In the most intensely malarial section of the district it averaged $75.10 per family, $27.20 per person sick, and $17.80 per person.

4. The total cost (three items) for the district in 1918 (assuming that $8,229.50 covered 80 per cent. of

the population of the district) was $10,400. Assuming that approximately the same incidence of malaria occurs in the southern part of the district in 1919, under full irrigation, as occurred in the northern part in 1918, the approximate loss for the entire district in 1919 will not be less than $13,500 for 325 families, or about $41.50 per family.

### OTHER COSTS OF MALARIA

Other costs of malaria, for which no accurate data were readily obtainable, are:

1. Deaths from malaria. The six deaths in this district in 1918 probably averaged not less than $100 per funeral, in addition to the economic value of the lives lost.

2. The item of labor loss among casual laborers. This is known to be large, but could not be determined at the time of investigation.

3. Losses caused by inability to handle crops at the proper time, on account of malaria attacks. One known instance of this kind resulted in a definite loss of $120.

4. Losses on forced sales of property, by people leaving the district on account of malaria. Nine families made statements of intention to leave the district because of the malaria. In addition, the presence of malaria deters many families from buying land and developing it: three such cases came to my attention, and there were rumors of many more.

5. Losses due to vacant property, particularly in Anderson town, much of it due to the presence of malaria. At least twenty such vacant properties were observed, which have an annual rental probably not less, on the average, than $200.

6. Removal by many families from the district in the summer for the express purpose of avoiding the malaria if possible. Eight such cases came to my attention, and there are probably more. Such moves can hardly average a lower cost than $50 to the family: the economic loss to the community is probably much greater.

7. The loss due to depreciation of property values caused by the presence of malaria and mosquitoes. This cannot be definitely determined, but is probably greater than all other items combined. A conservative estimate would be between $5 and $10 per acre, or, say roughly, $250,000 for the entire district.

### COST OF CONTROL MEASURES

The cost of drainage and mosquito control work in the district I have roughly estimated at $22,400 in the first year, $5,000 in the second year, and $3,800 in the third and subsequent years. Of the first year's expense, $12,000 is allowed for agricultural drainage and correction of interferences with natural drainage, which would be required regardless of the presence of malaria.

Estimating a 50 per cent. reduction of malaria in the first year, 75 per cent. in the second, 90 per cent. in the third, and 95 per cent. in the fourth year (our experience in California has shown that this is readily possible), four years' work should eliminate, in savings, the cost of malaria due to the three items of medicine, medical service, and labor loss, and should show a considerable profit in other items, particularly in appreciation of property values.

The organization of a mosquito abatement district, under the provisions of the state enabling act, has been advised as the first step in control measures.

## THE SO-CALLED DOUBTFUL OR PARTIAL WASSERMANN REACTIONS

### A PLEA FOR QUANTITATIVE RESULTS, AND DESCRIPTION OF THE WRITER'S METHOD

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In the early days of the Wassermann work it was found that, while the majority of serums obtained from bona fide cases of syphilis gave complete complement fixation, when tested in the usual manner, only partial fixation was noted in a certain proportion, and notably in those that had been undergoing active treatment. The occurrence of such partial reactions, which were generally designated by the symbols ++, +, ± and even ∓, was interpreted as indicating the presence of relatively small quantities of the syphilitic antibody, and hence as a favorable symptom in those undergoing treatment, but nevertheless as indicating the existence of syphilis. Further studies then showed that such partial reactions do occur, as a matter of fact, in actual cases of the disease, but that every partial reaction does not necessarily denote syphilis. Generally speaking, the conclusion was reached that complement fixation, whether complete or incomplete, can only be regarded as indicating the existence of the disease in question provided the biologic reagents employed in the test are of standard quality and stand in a definite quantitative relation to each other; that the investigator does not use antigens in too concentrated a form, or complement in too small an amount (or what amounts to the same thing in an insufficiently active state), or the hemolytic amboceptor in insufficient or too large a quantity, etc.; for lack of watchfulness in any of these respects may give rise to partial reactions or, indeed, to complete reactions, though the patient is nonsyphilitic, or to negative results in individuals suffering from a bona fide attack of the disease.

Many investigators, realizing these possible sources of error, have attempted to eliminate them by various modifications of Wassermann's original technic, and it may be confidently asserted that many false diagnoses of syphilis could be avoided if the laboratory workers saw fit to adopt some of the suggestions that have been made. But unfortunately they have not done so, and as a consequence the clinician only too frequently finds himself in disagreement with the laboratory worker, and particularly so on the basis of the so-called doubtful reactions. Many laboratory workers still report such results by the symbol ++, etc., thereby suggesting to the physician not so much the doubt that he himself may feel, but the actual existence of the disease. As the general practitioner is not commonly versed in the intricacies of the Wassermann technic, the plus sign to him usually means that the patient has syphilis, and is hence a signal for active treatment, irrespective of the number of plus marks that may be reported, and many a poor victim no doubt has thereby been condemned to years of unnecessary treatment.

Just why so many workers still insist on exposing themselves to the pitfalls of the original or the early Wassermann technic it is difficult to say, as some of the sources of error, at any rate, are fairly well under-

stood and might readily be avoided. In some instances an ultraconservatism is no doubt responsible for this reluctance to advance with the times—an ultraconservatism based on a general disinclination to deviate from the well-trodden path of the past. In other cases I have reason to assume that there is a tendency to leave well enough alone, on the ground that the original technic is time-consuming enough, as it is, and that any tendency to further lengthen the process would better be disregarded. Whatever the excuses may be, so much is certain, that no excuse is admissible when definite sources of error are disregarded at the expense of the patient.

In the present paper it is my purpose to discuss in some detail two factors that probably more commonly than any others are responsible for partial reactions and for negative reactions when syphilis actually exists.

### THE COMPLICATING RÔLE OF ANTISHEEP AMBOCEPTORS IN HUMAN SERUMS

Various writers have called attention to the fact that human serums may contain antisheep amboceptors in variable but frequently sufficient amount to transform an otherwise positive into a partial or even a negative reaction. Noguchi has shown that one antibody unit is made negative by six amboceptor units, and three antibody units by ten amboceptor units when the Wassermann system, that is, the guinea-pig complement antisheep system, is used. Theoretically this is interesting enough in itself, as the observation raises the question whether the supposed union between complement, syphilitic antibody and antigen can be severed by an excess of amboceptor, if indeed this conception of the nature of the so-called complement fixation expresses what actually takes place. However this may be, the fact remains that syphilitic serums which do contain a sufficient quantity of antisheep amboceptor will show only a partial or, indeed, a negative reaction when examined according to Wassermann's original method.

As regards the frequency with which such amboceptors occur in human serums, the impression seems to be quite common among some Wassermann workers that they are, after all, rare and may properly be neglected in routine work. Why this should be the general view, it is difficult to understand, for it is a simple matter to convince oneself that the presence of these antisheep amboceptors, as they are usually called, is not only not rare but, on the contrary, exceedingly common. I would suggest that those workers who believe that their presence may be disregarded treat their specimens after the first incubation with the usual quantity of corpuscle emulsion and reincubate for five to ten minutes and then examine their tubes before adding the amboceptor. They will no doubt be surprised to find a number of negative and partial final reactions, even if all the serums were obtained from syphilitic patients, and they will be convinced thereafter that their work under such conditions can have no claim to accuracy or dependability.

I have not made any special note of the number of times that I have encountered normal antisheep amboceptors in human serums in sufficient quantity to make a truly positive serum give either a partial or a negative reaction, but I have seen it so often as to have convinced myself quite early in my Wassermann work that this source of error must be eliminated. Noguchi reports that of 326 serums that he examined only twenty-three contained no antisheep amboceptors at all; that in 192 the quantity amounted to two units or more and in ninety-eight to four units or more—figures that speak for themselves.

Of the desirability of avoiding this source of error there can be no question. The problem is merely whether this can be done. Two methods have been proposed to this end.

Noguchi suggested the substitution of an antihuman system for Wassermann's antisheep system, and in certain laboratories this method of procedure is followed, and no doubt obviates, in most cases, errors arising from this source. I have myself advocated the removal of the natural amboceptors by extracting with sheep corpuscles, and those workers who have been sufficiently interested in this method to run parallel examinations, with and without extraction, are no doubt fully convinced of the necessity of the step and of the facility with which this can be done.[1]

Either method will prevent the obscuring of a positive reaction by the substitution of a negative or a partial reaction, provided a sufficient quantity of the syphilitic antibody is present. Neither method, however, in itself, takes this latter factor into consideration, whereas this factor is at least as important as the presence of natural amboceptors. We shall consider this in detail in the following section.

### VARIATIONS IN THE QUANTITY OF THE SYPHILITIC ANTIBODY IN THEIR RELATION TO PARTIAL REACTIONS

Recent investigations have shown me that in the presence of large quantities of the syphilitic antibody —in the standard dilution of 1:5—complement fixation takes place instantaneously, without any incubation whatsoever, especially if the total bulk of the diluted serum, antigen and complement is small, so that immediate contact of the various ingredients with each other is assured. If, for example, the standard volume for each component, in appropriate dilution, is 0.2 c.c., the hemolytic amboceptor and corpuscles may be added immediately following a simple shaking of the tube containing the patient's serum, the antigen and the complement, and it will be noted that on incubating an absolutely sharply cut triple or quadruple plus reaction, without any trace of hemolysis, may be frequently obtained. Evidently the velocity of the reaction under such conditions is enormous.

If now such a serum is further diluted, it will be observed that an instantaneous reaction can no longer be obtained, but that under the conditions of the experiment just described hemolysis of variable degree, i. e., a partial reaction, will occur. On incubation for a variable length of time before the addition of amboceptor and corpuscles, it will be noted, however, that complete fixation of the standard quantity of complement may be obtained, nevertheless. The length of time that is required to secure complete fixation depends on the degree of dilution; in other words, on the quantity of the reacting substance. The smaller this is, the more prolonged will the incubation period have to be. This may be expressed by stating that the velocity of the reaction is proportionate to the quantity of the reacting substance, or that the period of time

1. The majority of workers who do not use Noguchi's antihuman system fail to do so because of the difficulty of obtaining a high titer antihuman amboceptor.

necessary for complete fixation varies in inverse proportion to the quantity of the reacting substance.

A couple of examples will illustrate this:

1. A serum obtained from an active syphilitic in the second stage gave an instantaneous reaction in the usual dilution of 1:5. Dilutions were then prepared in the proportion of 1:10, 1:20, 1:30, and sets of 0.2 c.c. each were now combined with an equal quantity of antigen and complement, and incubated for varying lengths of time, amboceptor and corpuscles being finally added to test the extent of the complement fixation. The results are shown in Table 1.

TABLE 1.—REACTIONS OF VARIOUS DILUTIONS OF SERUM AFTER VARIOUS TIME PERIODS FROM AN ACTIVE SYPHILITIC IN THE SECOND STAGE

| | Immediate Reaction | Reaction after Incubation for 10 Min. | 20 Min. | 30 Min. | 40 Min. | 50 Min. |
|---|---|---|---|---|---|---|
| Dilution 1:5..... | +++ | +++ | +++ | +++ | +++ | +++ |
| Dilution 1:10..... | +++ | +++ | +++ | +++ | +++ | +++ |
| Dilution 1:20..... | 0 | 0 | 0 | ++ | ++ | +++ |
| Dilution 1:30..... | 0 | 0 | 0 | 0 | 0 | 0 |

2. In Table 2 will be found the reactions of serum obtained from a quiescent syphilitic in the third stage.

TABLE 2.—REACTIONS OF VARIOUS DILUTIONS OF SERUM OBTAINED FROM A QUIESCENT SYPHILITIC IN THE THIRD STAGE

| | Immediate Reaction | Reaction after Incubation for 10 Min. | 20 Min. | 30 Min. | 40 Min. | 50 Min. |
|---|---|---|---|---|---|---|
| Dilution 1:5..... | + | +++ | +++ | +++ | +++ | +++ |
| Dilution 1:10..... | 0 | ++ | +++ | +++ | +++ | +++ |
| Dilution 1:20..... | 0 | 0 | + | + | ++ | +++ |
| Dilution 1:30..... | 0 | 0 | 0 | 0 | 0 | 0 |

Such findings unquestionably warrant the conclusion that unless a patient's serum contains a certain quantity of the so-called syphilitic antibody complete complement fixation will not be obtainable within the usual incubation period of thirty minutes, which seems to have become the standard in the various laboratories the country over, but that a partial reaction will result if the amount is sufficient to that end, or a negative reaction if the quantity be particularly small. It would further follow that the meaning of such doubtful reactions could be determined by repeating the test with a longer period of incubation, and that in certain cases the presence of syphilitic antibody could still be definitely established by such means, whereas routine examinations along the old lines would lead to a negative result.

TABLE 3.—RESULTS OF LONG INCUBATION IN SERUMS CONTAINING ONLY A SLIGHT QUANTITY OF THE SYPHILITIC BODY

| Case | Stage of Disease | Reaction after Incubation For 30 Min. | For 60 Min. |
|---|---|---|---|
| B. | Tertiary stage | Partial | Complete |
| McC. | Tertiary stage | Negative | Complete |
| W. W. | Tertiary stage | Partial | Complete |
| H. | Primary (3d day) | Partial | Complete |
| 1616. | Secondary | Partial | Complete |
| P. M. | Early tabes | Partial | Complete |
| I. S. | Tertiary | Partial | Complete |

A few examples illustrating this point have been collected and are shown in Table 3, the first column indicating the result at the end of thirty minutes' incubation, the second after an hour's incubation.

SUGGESTION FOR A NEW SYSTEM OF DENOTING RESULTS

As the period of incubation that is necessary to effect complete complement fixation is thus unquestionably an index of the quantity of the reacting substance, it has occurred to me that on this basis a numerical scale for denoting partial reactions could be established that would prove more satisfactory and would yield more information than our old system of marking by plus signs, from which all of us would no doubt be only too glad to be released. In many laboratories the confusing ++, +, ± and ∓ signs are no longer used, and I sincerely believe it would be a wise step to eliminate these, and the three and four plus signs as well, and to substitute definite figures.

TABLE 4.—PROPOSED SYSTEM OF DENOTING REACTIONS

| | | | |
|---|---|---|---|
| 1 unit | requiring 60 Min. | for fixation, would represent | 1.0 per cent. |
| 10 units | requiring 50 Min. | for fixation, would represent | 16.6 per cent. |
| 15 units | requiring 45 Min. | for fixation, would represent | 25.0 per cent. |
| 20 units | requiring 40 Min. | for fixation, would represent | 33.3 per cent. |
| 30 units | requiring 30 Min. | for fixation, would represent | 50.0 per cent. |
| 40 units | requiring 20 Min. | for fixation, would represent | 66.6 per cent. |
| 45 units | requiring 15 Min. | for fixation, would represent | 75.0 per cent. |
| 50 units | requiring 10 Min. | for fixation, would represent | 83.3 per cent. |
| 60 units | requiring 0 Min. | for fixation, would represent | 100 or more |

I should therefore propose to designate as a unit such quantity of the syphilitic antibody as requires sixty minutes' incubation at from 37 to 40 C. to bring about complete fixation of a standard amount of complement. Such amount of the syphilitic antibody as is capable of fixing the same quantity of complement without any incubation whatsoever I should designate as sixty units and a reaction of the latter type I should term a 100 per cent. reaction. I have chosen the above quantity as the standard unit for the reason that when one progressively dilutes a serum that in the usual dilution of 1:5 will give an instantaneous reaction complete fixation in the highest dilution will require an incubation of sixty minutes.

According to this plan, then, the various percentages would correspond to definite units of the reacting substance on the basis of the number of minutes necessary to secure complete fixation of a standard amount of complement in the presence of a standard quantity of antigen, as illustrated in Table 4.

TABLE 5.—LENGTH OF TIME NECESSARY TO SECURE A +++ REACTION, TOGETHER WITH THE CORRESPONDING VARYING QUANTITIES OF ANTIBODY

| Case | Time Necessary to Bring About Complete Fixation, i. e. a +++ Reaction | Corresponding Content of Antibody |
|---|---|---|
| J. S. | 45 minutes | 25.0 per cent. |
| P. M. | 30 minutes | 50.0 per cent. |
| 1616. | 60 minutes | 1.0 per cent. |
| Mrs. D. | 10 minutes | 83.0 per cent. |
| Mrs. W. | 30 minutes | 50.0 per cent. |
| L. | 5 minutes | 91.6 per cent. |
| Y. | 1 minute | 100.0 per cent. |

Such a system of denotation would, in my opinion, be more logical than our plus signs. Every percentage figure would indicate that syphilitic antibody is actually present and would give an idea of the relative amount. With our present system, all of our +++ cases by no means contain the same quantity of reacting substance, as is clear from the varying length of time that is necessary to secure a +++ reaction.

This is well shown in Table 5, all the cases of which gave complete fixation, the time necessary to bring this about, varying, however, as indicated.

While the method suggested will, it is thought, be helpful in the study of +++ cases as designated by

the old system, it is proposed chiefly for the purpose of eliminating doubtful or partial reactions, which in the past have been so troublesome and confusing both to the laboratory worker and to the physician.

### PROBABLE MECHANISM UNDERLYING THE PRODUCTION OF PARTIAL REACTIONS

Let us consider the probable mechanism underlying the production of partial reactions due to the presence of small quantities of syphilitic antibody. In the past our conception of the nature of the Wassermann reaction has been that the syphilitic antibody and antigen combine and that complement is taken up by the resultant product. The dependence of the degree of complement fixation on the element of time, noted in the present paper, suggests that this idea must be somewhat modified. Evidently the reaction follows the law of mass action, the antibody itself apparently playing the rôle of a catalytic agent, which we may conceive as entering into some sort of a combination with either the complement or the antigen, but from which it is at once released when its temporary mission has been accomplished. If this is true, we can readily understand that in the presence of a large number of antibody units, each unit entering into action at the same time, complement fixation would occur with such rapidity that incubation is not necessary at all, the reaction being completed before the hemolytic amboceptor and corpuscles can be added, no matter with what haste this may be done. Similarly, of course, a variable length of time would be necessary to bring about the same result if the quantity of the reacting substance is less, and it will readily be understood that when this falls to a certain level only a fraction of the complement will have been fixed by the time the old standard incubation period of thirty minutes has been reached, and the remainder coming in contact with the hemolytic amboceptor and corpuscles at this time will now bring about partial hemolysis and hence lead to an inconclusive result. A prolongation of the incubation period, on the other hand, would lead to an increasing degree of fixation and under suitable conditions to a complete reaction, provided, of course, the factor that is responsible for the incomplete reaction under the old conditions of the experiment is in reality the one that we have just been considering. If this factor is not operative, and if the presence of natural hemolysins has been excluded, it may be confidently asserted that partial reactions cannot be referred to the existence of a syphilitic infection, and in such case it will be noted that the degree of fixation does not increase with the lengthening of the period of incubaion.

### PROPOSED TECHNIC

In discussing my work with some of my colleagues it was suggested that, since the Wassermann technic, even with the present system, is so time-consuming, every effort should be made to simplify it and not to lengthen the process by the introduction of any additional steps. I fully realize such a desideratum and would favor any change that would cut down the necessary time, provided this could be done without detracting from the accuracy of the test. But accuracy must, after all, be our prime consideration. However, I believe that I have succeeded in reducing the time required for routine examinations to such an extent by certain changes in technic that, even with the additional manipulations proposed for the purpose of obtaining quantitative results, and of eliminating doubtful reactions, the method as given in greater detail below will prove more expeditious than the technic now in vogue.

Before going on to a description of the method that I should advocate for general adoption I would like to discuss in detail a few technical questions that have not received the attention of laboratory workers that they deserve.

### TIME REQUIRED FOR THE EXTRACTION OF NATURAL AMBOCEPTORS

The majority of workers who prefer to extract the natural amboceptors by means of sheep corpuscles do so by diluting a given volume of the serum with four or five volumes of the standard corpuscle emulsion, and incubating for thirty minutes at from 37 to 40 C., after which the corpuscles are thrown down by centrifugation and the supernatant fluid is further treated in the usual manner.

The question arises as to how many units of natural antisheep amboceptor may be present in a human serum and how large a quantity of sheep cells are necessary to remove such an amount in a given length of time. That thirty minutes are more than sufficient I have shown long ago. Recent studies, however, have convinced me that a ten minute incubation period will suffice to extract from 0.4 c.c. of serum at least eighty units of amboceptor that has been artificially added, and that fifty units may indeed be removed in five minutes by four volumes of a 2.5 per cent. emulsion of sheep corpuscles (having reference to a 2.5 per cent. emulsion prepared from corpuscle mush). As Noguchi has shown that the content of human serums in antisheep amboceptors rarely exceeds ten units in 0.2 c.c. of serum, it is clear that a longer incubation than ten minutes is unnecessary and that a ten minute period may well serve as standard for extracting 0.4 c.c. of serum with 1.6 c.c. of standard sheep corpuscle emulsion.

### TIME REQUIRED FOR THE INACTIVATION OF SERUMS

In the past it has been customary to inactivate serums by exposure to a temperature of 56 C. in a water-bath for a period of thirty minutes. For larger volumes this may be necessary, but for such quantities as we commonly use in Wassermann work a shorter period will bring about the desired result, and for 0.4 c.c. portions inactivation for ten minutes is all that is necessary, as is seen from the following protocol:

TABLE 6.—EFFECT OF EXPOSURE TO 56 C. FOR VARYING LENGTHS OF TIME ON COMPLEMENT CONTENT OF SERUM

| Length of Exposure | Evidence of Hemolysis |
|---|---|
| 5 minutes | Faint trace |
| 10 minutes | None |
| 15 minutes | None |
| 20 minutes | None |
| 25 minutes | None |
| 30 minutes | None |

Four tenths c.c. portions of human serum were exposed to a temperature of 56 C. in the water-bath, for varying periods of time, as indicated in Table 6, and then diluted with four volumes of saline. Of the resultant dilutions 0.5 c.c. portions were treated with two and a half titer doses of antisheep amboceptor and a corresponding volume of corpuscle emulsion. The tubes were then incubated for fifteen minutes at from 37 to 40 C., centrifugalized and the supernatant fluid examined for evidence of hemolysis.

### AMOUNT OF COMPLEMENT TO BE USED AND TIME TO BE ALLOWED FOR FIXATION

With the original Wassermann technic it was customary to allow sixty minutes for the fixation of the complement, in the ordinary warm air incubator. Subsequently, when the water-bath incubator came into use, owing to the possibility of maintaining a more constant temperature and of bringing the contents of the tubes more quickly to the desired warmth, the time was cut down to thirty minutes. As I have shown above, however, the period of incubation necessary to secure complete complement fixation varies with the quantity of the syphilitic antibody, the amount of complement and antigen remaining the same. The larger the amount of complement, the amount of the antigen and the antibody remaining the same, the longer will have to be the period of incubation. This is shown in Table 7.

TABLE 7.—LENGTH OF TIME NECESSARY TO FIX VARYING AMOUNTS OF COMPLEMENT, THE QUANTITY OF ANTIBODY AND ANTIGEN REMAINING CONSTANT

| Degree of Complement Fixation in | Number of Complement Units | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 60 minutes | +++ | +++ | +++ | +++ | ∓ | 0 | 0 | 0 | 0 | 0 |
| 90 minutes | +++ | +++ | +++ | +++ | +++ | +++ | ∓ | 0 | 0 | 0 |

From these observations the conclusion would suggest itself that satisfactory end-results could be obtained most rapidly if small quantities of complement were used and relatively large amounts of the patient's serum. In my own work, however, I have adhered to 0.2 c.c. of a 1:10 dilution of complement in combination with 0.2 c.c. of a 1:5 dilution of the patient's serum, and a standard incubation time of ten minutes, unless special reasons existed for suspecting the presence of especially small quantities of syphilitic antibody. The antigen, of course, was used in like amount. With these volumes complete complement fixation will be obtained not only in ten minutes in the vast majority of syphilitic serums, but even without any incubation in most of the untreated cases.

### METHOD OF THE WRITER

The patients' serums are collected in the usual manner and separated from the corpuscles by centrifugation. Four tenths c.c. are inactivated for ten minutes at 56 C., intimately mixed with 1.6 c.c. of a 2.5 per cent. corpuscle emulsion (the percentage figure has reference to corpuscle mush and corresponds to 5 per cent. when the mush is first diluted to the original volume of the defibrinated blood that was placed in the centrifuge tubes) and extracted for ten minutes by incubating at from 37 to 40 C. in the water-bath. The corpuscles are then thrown down and the tubes are charged with 0.2 c.c. portions of the clear supernatant fluid, to which 0.2 c.c. portions of the antigen dilutions, the complement dilution, and in the case of the control tube, of saline instead of antigen are added. After they are shaken, the mixtures are incubated at from 37 to 40 C., in the water-bath and then tested for the presence of free complement by the addition of 0.2 c.c. of amboceptor (two and a half titer doses) and 0.2 c.c. of corpuscle emulsion (of the same strength as the one employed for purposes of extraction), the tubes being returned to the water-bath and left for ten minutes, or at least until the control tubes are completely hemolyzed.

The negative cases can then be read off at once and reported as such.

Those tubes in which complete hemolysis has not occurred are centrifugalized and the color of the supernatant fluid is noted. If this is colorless the examination may be reported as positive without further comment, or another set of tubes may be charged with the same reagents and in the same sequence, and thoroughly shaken after the addition of each, but not incubated at all before the addition of the amboceptor and the corpuscles. If the specimen is then incubated until the control tube is hemolyzed, and complete complement fixation has occurred, as manifested by lack of any hemolysis on final centrifugation, we are dealing with a 100 per cent. reaction. If partial hemolysis has occurred another set of tubes may be prepared and incubated for five minutes after adding the complement, and before testing for its fixation. If complete fixation now occurs we note the result as 91.6 per cent., while partial hemolysis in this set also, but complete fixation in the ten minute specimen, would place this in the 83 per cent. group.

Those specimens that gave a partial reaction on first examination, after ten minutes' incubation, are now further examined, to which end I usually put up a double set, of which the one is incubated for thirty minutes and the second for sixty minutes before adding the amboceptor and the corpuscles. If this is done, and all reagents have been functioning properly, it will be noted that every doubtful reaction will now resolve itself either into a straight negative or a straight positive reaction, the cause of the partial reaction at the end of the primary incubation for ten minutes being due, in syphilitic cases, to the presence of smaller quantities of the reacting substance which, as has been previously shown in this paper, require a longer period of time to perform the work prescribed.

As we have taken as a unit that quantity of syphilitic antibody contained in 0.04 c.c. of concentrated serum, which is equal to 0.2 c.c. of the diluted and extracted original 0.4 c.c. with which we started and which requires sixty minutes' incubation in the water-bath to completely fix 0.2 c.c. of our complement dilution in the presence of 0.2 c.c. of our standard antigen dilution, we denote such a reaction as a 1 per cent. reaction, whereas one occurring instantaneously; that is, without incubation, indicates a 100 per cent. reaction. The intervening values may be graded accordingly as already explained.

Partial reactions due to accidental factors, errors of technic, improper reagents, etc., never resolve themselves in the manner just described. They either disappear, or remain constant irrespective of the time of incubation; there is never a consistent increase in the degree of complement fixation as the period of incubation is lengthened, such as small amounts of syphilitic antibody will evoke.

Using the technic as outlined above, any worker who is sufficiently interested will, I am sure, not be disappointed in the results. To cite large series of cases illustrating its accuracy seems without purpose, particularly in view of the fact that many of the procedures with which the findings might be controlled are so thoroughly faulty that they would not constitite a proper control. I can warmly recommend the method, if for no other reason than the fact that it disposes of the troublesome problem of the doubtful or partial reactions.

# MEDICAL EDUCATION AS REVEALED BY THE WAR

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In the discussion this subject is receiving [at the present time] there is some danger that the question at issue may be lost sight of. The object of the discussion, and the only reason for it, is the improvement in methods of teaching medicine. No one supposes that these methods are now perfect or are in all cases even good. Methods continually change, which must mean either improvement or retrogression.

The issue is to learn how to improve present conditions for instruction—how to produce physicians more competent than those of our generation.[1] To this end an inventory of facilities for instruction and systems now used, and their results, as they have been revealed by the war, is most useful. There is no question respecting the loyalty of medical officers, nor of their willingness to give, in any capacity, all that they have to give. This has impressed not only me, but it has been the general consensus of opinion. Nor is there any point in befogging a serious discussion by endeavoring to inject into it a digression concerning regular and reserve officers. There is no question in that direction; all did their best. All alike, regular and reserve, were conspicuous for loyalty, steadfastness of purpose; a remarkable average of capacity and integrity.

## EXPERIENCE GAINED AS CHIEF OF MEDICAL SERVICE

As a chief of Medical Services in three military hospitals, no incident has come to my attention in which the character of a medical officer has been involved. Even in a few deplorable cases in which medical officers had to be gotten rid of because of professional incompetency, it was always a most regrettable occasion, because these officers were trying in every instance to meet new and exacting demands and their failures were due solely to the fact that their education and training were defective, and they were past the age of learning with facility. I insist on this point, that the issue may be sharply drawn between the doctor as a man and as a physician.

Both base hospitals and general hospitals functioned as medical schools during the period of mobilization. On this account, it fell to my lot to come in very close contact with a large number of physicians who had entered the service from civil life. During 1917–1918, a very few of these medical officers who were sent to the hospitals had passed through training camps, so that they may be said to represent a different group, for the most part, from those who were mobilized at Oglethorpe and other medical camps.

The impression gained from this experience was a painful shock to me, and, as I later found, to many others who had given the best years of their lives to the teaching of medicine. The too numerous examples of inefficiency and ignorance of physicians was a subject for deep study. This condition should have surprised no one so much as it did, as reports show, for example, that patients sent into the large hospitals are so often admitted with their condition incorrectly diagnosed. These facts were forgotten; the grade of medical competency which was brought out in the military hospitals came as a shock. There can be very little question that medical inefficiency is much more widespread than we have been willing to admit. The following considerations are significant. There were, in round numbers, 150 base hospitals mobilized. It was only with the greatest difficulty that physicians professionally capable of acting as chiefs of service were found for these hospitals. The dearth was not due to scarcity of physicians of intelligence and native capacity, but purely to a want of scientific training and professional knowledge in these officers. In the first place, this is demonstrated by the fact that it was possible, by means of intensive postgraduate courses at the camp hospitals, to train many general practitioners into satisfactory internists who qualified later as chiefs. In the second place, no adequate number of physicians capable of diagnosing the common cardiac diseases could be found to act on examining boards. No more important medical work can be cited than these examinations. To keep out of the army the physically unfit, to relegate to proper duty the partially incapacitated, this work determined the physical character of fighting units, prevented unnecessary sickness and saved expense. Yet physicians had to be trained in military hospitals to recognize the few cardiac disorders which are disabling. And here again the fact that these examiners were produced, that a brief course of intensive training transformed a large number of practitioners into valuable officers for important duty, speaks volumes.

## OUR BELIEF REGARDING COMPETENCY OF RECENT GRADUATE

We have been telling ourselves that incompetency in our profession is the result of former conditions, that the young men, graduates since the reorganization of the last decade, are usually well trained. This is very far from a correct statement of conditions. The number of untrained, incompetent recent graduates is the most depressing feature of my experience in army hospitals. These were mostly, if not all, possessed of some ability and eager to learn, and the rapidity of their progress, when they were given a fair chance, was wholly damning to their earlier educational surroundings. I must recount one example which is typical of many that have come under my personal observation. This boy is remembered, because of a peculiarly ingratiating personality. He had graduated two years before at a school which is advertised as Grade A, and had spent eighteen months in a hospital, in a city of 200,000 population. He came into the army direct from his hospital experience, and I found him about as expert in diagnosis as a third-year medical student should be. He could recognize no clinical pictures that required physical examination; knew nothing of the mysteries of differentiating systolic and diastolic murmurs. As we became acquainted I learned why. His undergraduate teaching had been of the lecture-demonstration-clinic variety; no actual personal instruction. In hospital, things were worse. The attending physician called now and then and his visits were brief. The hospital instruction consisted of the senior intern teaching the junior. What sort of medical tradition would be expected under the circumstances? This lad had been horribly cheated. He

1. Munson, Edward L.: The Needs of Medical Education as Revealed by the War, J. A. M. A. 72: 1050 (April 12) 1919. Ibid., Correspondence Department, p. 1095.

had wasted precious years. He had brains and he worked. He simply was not given what he longed to have.

Many of these men, both young and mature, I have come to know with an intimacy that only army camp life can afford; they have been my loyal assistants, and I feel a deep personal affection for them; and I know what I say when I assert that those who were not competent were not so by choice. They retained potential growth, and they grew when they were taught and helped. Sixty-six per cent. of the graduates last year took their degree in what we call Grade A schools. Evidently the time is ripe for a regrading.

My personal experience in base hospitals can be briefly summarized. Physicians, irrespective of age, who had served at some time as interns in good hospitals were usually efficient, safe, and trustworthy. These men, as a rule, were graduates of good medical schools, but this was not invariably the case. There were notable exceptional cases in which men had graduated from mediocre schools and had appointments as interns in good hospitals. In the second place, men who had not had some hospital experience, or who had been interns in poor hospitals, were usually inefficient, ignorant of common methods of diagnosis, and were not to be trusted with the seriously sick. Some of these men came from good schools and their scientific point of view was, perhaps, correct; the majority, from weaker schools, had no point of view at all. In the practical workings of a large hospital staff intrusted with the care of from 500 to 1,000 patients, there was no exaggerated refinement in determining a physician's qualifications to care for the sick.

What I have detailed as my personal experience would, I believe, be concurred in generally by chiefs of military hospitals. I have discussed the subject in all its details with a good many of them. Many of us have been teachers of clinical medicine all our lives and were vitally interested. Nearly a year ago I wrote down my impressions of the general practitioner who had not had good hospital training, as I have seen him in camp and hospital; and I submitted this impression to three other chiefs who were, like myself, teachers. Not one said it was an exaggeration. These impressions were as follows:

1. The practitioner of this class cannot differentiate a systolic from a diastolic murmur; in consequence, he is wholly incompetent to express an opinion about a cardiac disorder.

2. He cannot differentiate pleural effusion from pneumonia. He has never done a thoracentesis, so he cannot correct his own tendency to error.

3. He cannot recognize meningitis and has never done (often never seen done) a lumbar puncture, hence he cannot treat the disease.

Occasionally he has never seen diphtheria, though he has seen "membranous croup" which terminated fatally. A few had never seen diphtheria antitoxin administered.

The diseases I took for my basis are the common diseases. Pneumonia for years has been the "master of the men of death." We are all alike helpless enough, but what is the value of the physician if he cannot recognize complications which have a remedy when recognized? Of what help is a meningitis serum, if the disease is not diagnosed? The keystone of medicine is diagnosis; without it the structure collapses.

### RECOGNITION OF DEFECTS IN MEDICAL EDUCATION NECESSARY

A frank and honest recognition of the defects in present medical education is necessary for any progress toward betterment. This discussion will result in no good unless it leads to reorganization of medical schools and in teaching hospitals. In the last decade, the emphasis has been placed on the laboratory aspect of medicine. Probably that was correct, because a scientific point of view was at that time generally lacking. But we must not make the mistake of believing that the scientific care of the sick can be taught in the laboratory. It can be taught only in one place, a hospital ward. It can be taught only in one way, by a competent clinician at the bedside to a small group of students. Medical schools that do not command large hospital facilities with adequate funds to utilize all scientific methods in the diagnosis and treatment of disease, and adequate funds for a large teaching staff, cannot teach clinical medicine.

There are quite a number of medical schools classed as Grade A which have not these opportunities to offer to their students, and on that account they are heavily handicapped in training students for the practice of medicine in any of its branches. The science of medicine can be taught in the laboratory and didactically; the art of medicine cannot be so taught. What I mean is this: A good pathologist ignorant of the art of medicine can make a diagnosis if one bring him certain facts relative to the physical signs in the case. But the same pathologist could probably not elicit those signs at the bedside. It is the ability to examine a patient and to gather the important data which constitutes the art of diagnosis. This art cannot be taught didactically; it may be taught successfully only at the bedside. All of my observations have gone to confirm me in the belief that the general practitioner is inefficient because he does not know how to examine patients. At the School of Military Medicine, Fort Oglethorpe, two weeks of the brief course was expended in teaching this fundamental art. Brief and superficial as the course had to be, many a physician who had graduated within the last decade from a school reputed to be good asserted that this superficial course gave him more than his school had given.

Clinical instruction has improved markedly in the last decade in recognizing the requirements for teaching diagnosis, but there is not yet anything like a general adoption on the part of medical schools of bedside teaching or the clinical clerk system. Except in a relatively small number of very high grade schools, these modes of instruction are farcical. There seems little doubt in the mind of any one as to the desirability of this method; the difficulty has been to secure hospital facilities for medical schools and to afford financial outlay for the salaries of the corps of instructors. The program for the future in medical schools must take into account these features, in the same way that in the past attention has been paid to the laboratories of the fundamental sciences. At best, medical schools can teach only principles and methods. The bright graduate of the best of schools is wholly unfitted to practice medicine. He knows principles and he knows methods; he knows types of diseases, perhaps. He does not know variations in types and he is lacking in the experience which renders him safe. From the point of view of public welfare, the required hospital year cannot come too soon. However, the mistake

must not be made in this country which has been made in some countries, that a year in any hospital is acceptable. This formative period spent under the direction of a poor clinician has only bad habits and erroneous ideas for its result. Some way must be found whereby medical schools or the state can designate the hospitals in which men may serve their internship.

### NECESSITY FOR IMPROVED CLINICAL INSTRUCTION

Reluctantly I have been forced to the conclusion that training in a first class hospital is equally as important, if not more important, than undergraduate instruction in fitting physicians to care for the sick. So many examples have come to my notice of men who had graduated from schools known to be mediocre or worse, but who had a hospital service under an excellent attending physician who had left the mark of his teaching and influence on his assistants. But better far no internship at all than the blighting and pernicious atmosphere that young men come into in many poor hospitals. The welfare of the public is our concern—the reason for our profession. We would better lead where soon we needs must follow. Signs are not wanting that more is demanded than is now given. A test of fitness to practice could be met only by men trained in good hospitals, for the test will be the ability to recognize, to diagnose, disease—a practical test.

My ideas of the defects in medical education, as revealed by the product of the medical schools, would indicate that progress for the future in teaching the clinical subjects must be along lines of practical, intimate instruction in the art and science of diagnosis. We must teach students how to examine patients with that same minuteness and thoroughness of analytical method that is used in the bacteriological laboratory in the differentiation of bacterial types. The laboratory of clinical medicine is the ward. Nothing can take its place. Didactic teaching, the lecture, and the clinic should be relegated to an entirely subordinate position. They have a use, but a subordinate use.

A thorough revision of the list of Grade A schools should be made from the point of view of their ability to meet the demands of practical instruction, in the clinical years. Schools that cannot hope to have in the future the funds and the hospital facilities necessary for teaching medicine in the final years should offer only the fundamental sciences.

This point of view may seem novel in coming from one who has spent much of his time in laboratories, in research, and who has done what he could to promote the spirit of investigation among students. I am not losing sight of the need of that group of students, but numerically that group will always be small. The promising investigator is the exception, and he can be handled in the exceptional way. The average student in medicine, as the average student in law or theology or chemistry, has no mind for abstractions; he has scant ambition to be a scientist. His tastes and his inclinations are quite otherwise, and we must not forget that modest intellectual ambition does not unfit him for great usefulness, if he is given proper training.

**Is Your Community Fit?**—Have you any definite information as to the prevalence of preventable diseases in your city? Without such information health officials cannot direct their activities in a way that will yield the largest returns in disease prevention. All doctors must report such diseases as part of their responsibility to the community.—*Pub. Health Rep.*, April 25, 1919.

# THE PRODUCTION OF INDOL BY CERTAIN STRAINS OF THE PFEIFFER BACILLUS*

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So few positive cultural characters have been recorded for the Pfeiffer bacillus that each additional biologic quality is of some interest. I have not found any statement that a previous test for indol production has been made. Zipfel,[1] who seems to have carried out the most comprehensive series of observations by modern methods on the production of indol by bacteria, lists only four groups as indol-formers (*B. coli* group, *B. dysenteriae* Vars. Flexner and Y, the cholera vibrios and the cholera-like vibrios excepting V. Finkler-Prior and V. Deneke) and sixteen groups as not forming indol. Pfeiffer's bacillus was apparently not among those tested.

The majority of strains of the Pfeiffer bacillus that I have been able to obtain form indol promptly. The paradimethylamidobenzaldehyde method is used. A satisfactory medium is standard meat infusion broth to which 5 per cent. of sheep blood is added while the broth is hot (above 90 C.) and which is then filtered through cotton or filter paper.

In all, thirteen strains of the Pfeiffer bacillus have been tested. These include two strains from fatal cases of influenza—one from heart blood, the other from lung tissue. Seven strains are from normal throats and one from influenza sputum; the source of the others is not known. All show the hitherto recognized cultural and morphologic characters of the Pfeiffer bacillus. Ten of the thirteen strains produce indol abundantly in twenty-four hours. Two of the three strains giving negative results are from normal throats; the source of the other is not known. Five strains are from Chicago, four from Rochester, Minn., two from Washington, D. C., and two from New York City. The three strains not producing indol are from Chicago, Washington and Rochester, respectively.

It seems possible that this character may be usable for a rough preliminary differentiation of the indol-producing Pfeiffer bacilli or for a "presumptive test" of their presence. The other bacteria commonly found in the throat do not appear to be indol-formers. Zipfel and others have reported finding no evidence of indol production by the various cocci and I have tested thirty-six different strains of green-producing and hemolytic streptococci, pneumococci, meningococci and staphylococci from the mouth, with uniformly negative results. Diphtheria bacilli were reported by some of the earlier workers as forming indol, but later investigators have generally not confirmed this. Zipfel tested twenty-seven strains with a negative outcome. I have obtained no indol products with any one of five strains.

Simultaneous inoculations of blood broth with pure cultures of the Pfeiffer bacillus and of the ordinary mouth cocci have shown that the Pfeiffer bacillus is able to grow in competition with the other organisms, and that the mixture, like the pure culture, yields a good indol reaction in twenty-four hours.

It was thought that throat swabs washed directly into the broth might give an indication of the presence

* Influenza Investigations, U. S. Public Health Service.
1. Zipfel: Centralbl. f. Bakteriol. I, Orig., **67**: 572, 1913.

of indol-producing Pfeiffer bacilli. Fifty-eight different normal persons have been examined with this in view. A positive indol reaction has been obtained in forty-eight, a negative in ten, making the proportion of positive indol findings from throat swabs about 83 per cent. Seven of the persons giving positive indol reactions from throat swabs had a history of influenza in the fall of 1918; also three of those giving negative reactions.

Seven of those giving negative indol reactions were retested (from a few days to a few weeks later) and four of these yielded indol on the second testing. In three of these both tonsil and nasopharynx swabs gave indol; in the other only the tonsil swab.

If a peptone phosphate medium is used in which *B. coli* and other indol-producing bacteria give abundant indol, no indol is formed after inoculating with throat swabs although good growth occurs. Parallel tests with swabs taken from the same throat at the same time have shown indol production in the blood broth but never in the peptone phosphate medium. Apparently, therefore, a hemophilic organism is the one responsible for the indol production from throat swabs.

It seems a fair presumption from the available data that indol production in blood broth inoculated with throat swabs is due to the presence of indol-producing strains of the Pfeiffer bacillus, although a final judgment on this point is hardly possible at the present time. Should this presumption prove to be justified, these results indicate the presence of Pfeiffer bacilli of this type in approximately 80 per cent. of normal throats. This is a higher proportion than usually obtained by the ordinary cultural methods. In the cases examined in this series the presence of the Pfeiffer bacillus was indicated in about 40 per cent. by the blood agar plate cultural method, as compared with about 80 per cent. by the indol presumptive test.

## Clinical Notes, Suggestions, and New Instruments

### A METHOD OF DELIVERING THE PLACENTA

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I desire to present a procedure for the expulsion of the placenta. Physicians in general have accepted the dictum that the third stage of labor should be allowed to develop naturally, and that no attempt should be made to express the placenta until separation has occurred, provided there is no hemorrhage.

The interval between the birth of the child and the moment of expression of the placenta is still being handled in different fashion, according to the teachings of various clinics, ranging from the absolutely let alone policy of Leopold, who insists that the abdomen should be left untouched following the birth of the child, if need be for twenty-four hours, leaving the expression of the placenta absolutely to the natural powers of the woman; to the other extreme, which consists in grasping the fundus, and as soon as contractions have appeared or have been called forth by massage, to express the placenta. Omitting a critical consideration of the merits of these various procedures at this time, and limiting myself to a discussion of the act of expulsion, I think the consensus of the best obstetrical opinion of today, in this country at least, is that after a suitable period of waiting, which averages half an hour, the uterus having undergone sufficient contractions, the placenta being separated and lying in the lower uterine segment, it is then permissible to grasp the fundus directly over its center, and the uterus being in contraction and in midline, to express the placenta.

In skilled hands, with a proper recognition of the risk of too much traumatism resulting in a metritis, and of rupture of a pus tube by grasping the fundus laterally instead of centrally, this procedure is entirely without danger. However, if there is a way in which the natural powers of the woman, both voluntary and involuntary, can be utilized for the purpose of expression without handling the uterus, I am sure this is preferable. All of us have seen the not infrequent cases in which the woman spontaneously expels the placenta directly after delivery, or just as we are about to express it for her. In a great majority of cases her inability to accomplish expulsion spontaneously is due to the complete loss of tone of the abdominal wall just released from its prolonged condition of overstretching. If the abdominal tone and the intra-abdominal pressure can be restored for the time being, the woman has regained her voluntary powers of expulsion.

For some time I have been accomplishing this in a very simple way. After the usual period of waiting, averaging half an hour, and when the uterus is at the height of a contraction, as evidenced both by feeling it and by the pain the woman is experiencing, I grasp the abdominal wall crosswise above the fundus and pull the rectus muscles together, thus taking up all the slack. I then encourage the woman to bear down, and in practically every case in which expression on the fundus would have succeeded, this procedure has succeeded. If then there should be adherent membranes, they are treated in exactly the same fashion as following any other method of expression. The advantage claimed for this procedure is a total avoidance of handling or pressure on the uterus, and I believe that any device that will help to achieve that end, and give the same result, is worth advocating.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

**PROTARGENTUM-SQUIBB.**—A compound of gelatin and silver, containing approximately 8 per cent. of silver in organic combination.

*Actions and Uses.*—See general article Silver Preparations (New and Nonofficial Remedies, 1919, p. 307).

*Dosage.*—Protargentum-Squibb is used in 0.25 to 5 per cent. aqueous solutions, which should preferably be prepared fresh as required. Solutions are best made by sprinkling the powder on cold water without stirring.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patent or trademark.

Protargentum-Squibb is obtained by the action of silver nitrate on gelatin in the presence of an alkali, precipitation by alcohol and drying in *vacuo*.

Protargentum-Squibb is a chocolate colored, odorless powder, readily though slowly soluble in water, insoluble in alcohol or oils.

An aqueous solution of protargentum-Squibb is alkaline to litmus, but neutral to phenolphthalein. An aqueous solution is not affected by addition of albumin nor by cocaine hydrochloride in weak solution.

When an aqueous solution is treated with sodium chloride, no precipitate is produced although opalescence occurs; no precipitate is formed on the addition of acetic acid.

Dissolve about 1 gm. of protargentum-Squibb, accurately weighed in about 10 Cc. of distilled water, add 10 Cc. sulphuric acid, U. S., and sufficient powdered potassium permanganate so that the color of permanganate persists for ten minutes (about 2 Gm.). Decolorize the liquid with powdered oxalic acid, add 10 Cc. nitric acid (25 per cent.), heat on a bath of boiling water for fifteen minutes to destroy excess of oxalic acid, cool, dilute with 50 Cc. distilled water, add 5 Cc. saturated solution of ferric ammonium sulphate and then titrate with tenth-normal volumetric potassium sulphocyanate solution. It should show not less than 8 per cent., nor more than 9 per cent. of silver.

Each c.c. of tenth-normal volumetric potassium sulphocyanate solution corresponds to 0.010788 Gm. silver.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 24, 1919

## SCIENCE AND SURGERY

A recent paper by Horsley[1] on the value of biologic principles in surgical practice concluded with these words:

> Real progress in surgery lies not so much in cultivating the art of surgery and in striving after mechanical dexterity, which is important but can be acquired in a few years, as in the study of biologic principles that concern function, nutrition, metabolism, and repair of tissues, and in the thoughtful application of these principles to every operation and to every method of surgical treatment.

It would be easy to substantiate this significant statement by reference to the history of progress in surgical performance. However, it cannot be reiterated too often, especially to those about to embark on a career in medicine, that technic and curative or operative methods are merely means to an end. Real advance of a permanent sort can rarely be made until there is some appreciation that bodily disorders are in most instances the expression of perverted functions which must be thoroughly understood to be intelligently dealt with, not only in medicine but also in surgery. An accurate knowledge of the location of bodily structures and an ability to alter their position or connections by skilful surgical manipulation may, after all, avail very little unless the mode of physiologic performance of the organs concerned is understood sufficiently well to give promise of satisfactory functioning after the anatomic alterations or reconstructions are carried out. The modern procedures for facilitating wound healing are based not merely on clever manipulations and mechanical devices but, above all, on a careful study of the response of denuded tissues to the operations to which they are exposed. The determination of an optimum reaction of an irrigating solution and the response of the living cells to it require attention quite as well as its antiseptic properties or the route by which it can be made to penetrate wounds. The most skilful operator cannot avoid an insult to injured tissues if, blind to the physiologic principles involved in the nutrition of these living parts, he thinks and acts solely in terms of technic.

In a way it is unfortunate that so much interest is centered by the average advanced student in the purely operative aspects of his work so far as empirical methods are emphasized. The "clever operator" tends to be uppermost in his mind. The student has presumably been inducted into the bearing of a functional point of view during his first two years of study when the methods of the scientist preponderate in all his instruction. He must show proficiency in the sciences concerned with the origin of disease, because their importance is now universally admitted. But, as Macleod[2] has pointed out, when the surgical clinic is reached the methods of the scientist are all too frequently cast aside; and an understanding of disease is sought for largely by the empirical method, namely, by the endeavor to see and examine innumerable patients, to diagnose the case according to the grouping of the signs and symptoms, and to treat it by the prescribed methods of experience. Sir Clifford Allbutt proclaimed in his recent presidential address before the British Medical Association that the new birth of medicine is nothing less than the enlargement of medicine from an art of observation and empiricism to an applied science founded on research.[3] The sooner it is realized that real surgical success rests on physiologically sound thinking as well as on unique manual dexterity, the greater will be the prospect of renewed progress.

## NEUROCIRCULATORY ASTHENIA

The careful examinations of thousands of soldiers by skilled medical observers during the past few years have served to bring into prominence various clinical manifestations which might have remained unemphasized or even undiscovered in the casual routine of peace-time practice. The necessity of eliminating the unfit from service and of detecting even latent defects of function has served to focus attention on many items of seemingly trifling import which military experience has gradually brought into more deserving prominence. This is particularly true of abnormalities, or perhaps one should call them inferiorities, of the nervous and vascular apparatus.

In this way a group of symptoms has been designated as neurocirculatory asthenia, sometimes as the "effort syndrome." This has appeared not only abroad but also in our American military camps. In the words of members of a cardiovascular board of the Medical Service of the Army, the signs are increased pulse rate, tremor of the fingers, and cold, moist hands which become cyanosed when dependent. The symptoms are precordial pain with dyspnea and palpitation on moderate exertion, such indications of vasomotor

1. Horsley, J. S.: The Value of Biologic Principles in Surgical Practice, J. A. M. A. **72**: 1263 (May 3) 1919.

2. Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, 1918.

3. The Clinical and Scientific Meeting of the British Medical Association, J. A. M. A. **72**: 1312 (May 3) 1919.

instability as dizziness, flushing and fainting, and a variety of other complaints, all pointing to a state of excessive reaction of the nervous system to psychic or physical strain.[1]

Symptoms of "nervous instability" are frequently and glibly referred to some derangement of thyroid function. A rapid pulse is a manifestation of heightened metabolism. The latter is a concomitant of various sorts of thyroidal upset. But it would be rash to assert that all undue stimulation of metabolism, and therefore all cases of augmented pulse rate, are referable to the thyroid for their genesis. Nevertheless, it seemed worth while to ascertain whether there is any frequent correlation of visible thyroid alteration, such as enlargement represents, with the appearance of the special symptoms and signs of neurocirculatory asthenia. The comparisons drawn by Addis and Kerr[1] at Camp Lewis, American Lake, Washington, on recruits from that state as well as from Oregon and California fail to confirm the prevalent impression that thyroid enlargement is almost constantly present in persons exhibiting the effort syndrome. Thus the development of "toxic goiter" can scarcely be the cause of the syndrome, even in persons with enlarged thyroid. Addis and Kerr assert that the enlargement of this gland in such cases is incidental and not causative. For practical consideration they add that there is no reason why cases of thyroid enlargement with the syndrome should be considered as in any essential respect different from those without thyroid enlargement, nor any reason why the treatment and the disposition of these cases should necessarily be altered by the thyroid enlargement as such.

## NATIVITY OF PARENTS AS A FACTOR IN INFANT MORTALITY

Statistics have often become the subject of ridicule, and rightly so, when they have been applied to the problems of human betterment. Indeed, it may be stated with presumable fairness that few medically trained persons are really competent to use statistics in a scientific manner. When, however, the professional statistician "juggles the figures," they gain a sort of recognition which is otherwise rarely accorded to them. These comments are the prelude to a consideration of the high rate of infant morbidity and mortality which still exists in various parts of this country. It has long been evident that any effective program for remedying the existing conditions must be based on a careful analysis of available statistical data. A recently published study by Eastman[2] of the Division of Vital Statistics of the New York State Department of Health has furnished food for thought as to the direction to be taken by future measures for the conservation or betterment of child life. It shows, as might be expected, that where an unfavorable sanitary environment is likely to be found, deaths from communicable, respiratory and gastro-intestinal disease are abundant. This is the case among the foreign-born population, the majority of whom, Eastman points out, are poor, illiterate, without knowledge of English, and almost wholly ignorant of the elements of modern sanitation, and inhabit, as a rule, the most congested districts of the large manufacturing centers. On the other hand, Eastman avers, the superior environment and intelligence of the average native woman is reflected in the comparatively low mortality of her babies from these diseases.

The great majority of deaths of children above 1 month of age are caused by the diseases already mentioned. Despite this contrast between the untutored foreigner and the native stock, it is a statistical fact that in New York State the mortality of babies under 1 month of age is higher among those born to native mothers than among children born of women of foreign nativity. Although the mortality of children in 1916 under 1 year of age born of native women was only 87 per thousand births, compared with 108.4 for children of foreign born mothers, the rate under 1 month for the former was 47.4, as against 45.2 for the latter. About three quarters of the deaths of infants under 1 month of age are due to prenatal causes. Of the total number of deaths occurring in 1916 within the first day after birth, more than 60 per cent. were due to premature birth, 13 per cent. to congenital debility and malformations, and nearly 15 per cent. to injuries at birth, amounting in all to about 88 per cent.

All workers for social betterment realize the beneficent possibilities of efforts to reduce infant mortality where unhygienic factors like overcrowding, improper feeding, imperfect sanitation and other comparable and remediable conditions prevail. The new study just reported indicates that amid our concern for the dangers arising from ignorance and indifference we must not be oblivious to the fact that insanitary environment is not the only matter deserving of serious consideration in any campaign for child welfare. Deaths from premature birth and congenital causes have different explanations, among which venereal disease and alcoholism are to be found. Hence Eastman wisely advises that if the population of any section is discovered to be preponderantly native, the proper course to be adopted should be mainly one of education in regard to prenatal conditions. If it is found to be largely of foreign born stock, it will be necessary to plan principally for a course of instruction in the proper feeding and care of the infant and for the improvement of sanitation. This procedure, Eastman adds, would seem to be both rational and practicable, and should be the basis of all future campaigns for infant welfare that aim at efficiency and success.

1. Addis, Thomas, and Kerr, W. J.: The Relative Frequency in Recruits With and Without Thyroid Enlargement of Certain Signs and Symptoms Which Occur in Neurocirculatory Asthenia, Arch. Int. Med. **23**: 316 (March) 1919.
2. Eastman, P. R.: The Relation of Parental Nativity to the Infant Mortality of New York State, Am. J. Dis. Child. **17**: 195 (March) 1919.

## WHAT THE UNITED STATES SUPREME COURT THINKS OF FORMULA DISCLOSURE —IN FOODS

On April 14, 1919, the United States Supreme Court handed down a decision of the highest importance to those interested in questions of public health. The question before the court was one dealing with the right of a state to require manufacturers of proprietary foods to print on the labels of their products the names and quantities of the ingredients. This right had been attacked by the manufacturers of a proprietary food, who charged that the state's requirement was a violation of their constitutional guaranties in that it amounted to taking their property without due process of law. This argument was based on the fact that the proprietary food product was made under a secret formula, and that to disclose that formula would cause the manufacturer great and irreparable damage. The Supreme Court's answer to this argument is definite and to the point:

". . . it is too plain for argument that a manufacturer or vendor has no constitutional right to sell goods without giving to the purchaser fair information of what it is that is being sold. The right of a manufacturer to maintain secrecy as to his compounds and processes must be held subject to the right of the state, in the exercise of its police power and in promotion of fair dealing, to require that the nature of the product be fairly set forth."

Briefly, the facts in the case were these: The Corn Products Refining Co. of Illinois makes, among other preparations, a proprietary table syrup that is composed of 85 per cent. glucose (euphemistically known as "corn syrup"), 10 per cent. molasses, and 5 per cent. sorghum. This mixture was sold under the proprietary name "Mary Jane." The labels on the tins declared that the product was "A Table Syrup Prepared from Corn Syrup, Molasses and Pure Country Sorghum. Contains Sulphur Dioxid."

The state of Kansas has a good pure food law and, what is equally important, it seems to have officials that will enforce the law. One of the requirements of the Kansas law is that manufacturers of proprietary foods must state on the label the names and percentages of the materials used, and specifically in the case of syrups "the principal label shall state definitely, in conspicuous letters, the percentages of each ingredient, in the case of compounds, mixtures, imitations or blends." As "Mary Jane" was obviously a compound, and as the labels did not give the percentages of the ingredients, the Kansas State Board of Health notified those who were selling "Mary Jane" that unless the syrup was plainly labeled a compound and the percentages of each ingredient were given, there would be arrests and prosecutions. As a result of this action, the Corn Products Refining Company brought action against the members of the board of health, declaring in effect that the requirements of the board were in conflict with the constitution of the United States, both as regards the interstate commerce clause, and as pertaining to the Fourteenth amendment. They also claimed that it was in conflict with the federal Food and Drugs Act.

The case came to trial in a district court, in which the glucose concern won, that court ordering that a perpetual injunction should be issued restricting the State Board of Health of Kansas from interfering with the sale of "Mary Jane." The board of health appealed the case to the Supreme Court of Kansas, which court, having a better appreciation of the interests of the public, reversed the judgment of the district court. The Corn Products Refining Company then carried the case up to the Supreme Court of the United States, with the result that the judgment of the Kansas Supreme Court was upheld. It now becomes a matter of record from the highest court in the land that secret formulas of proprietary foods, at least, are not the holy and inviolable things that the proprietors thereof would have us believe. Slowly the old order passes. The rights of property, held in the past, by the interpretation of the courts, as paramount to the rights of health, are gradually assuming their proper relation in the scheme of a rational state.

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## THE PREVENTION OF PNEUMONIA BY INOCULATION

An able clinician and investigator whose interest has centered chiefly on the pneumonia problem remarked recently that "the more cases of pneumonia he treated the less treatment they got." It was a healthy confession of our present limitation in therapeusis which only adds emphasis to the value of the preventive measures that have been developed during recent years. To this advance American medicine has contributed its full share.

Following the promising but inexact experiments of Wright in South Africa, it will be recalled that Lister[1] carried out prophylactic immunization in a large number of Rand mine workers, using a composite vaccine made from pneumococcus types prevalent in that region. Lister at first tried intravenous injections; later, however, he found that subcutaneous injections were sufficient to establish an immunity against infection. This protection was almost 100 per cent. efficient against the particular types of pneumococci used in the vaccine, thereby justifying the belief that prevention of pneumonia by vaccines was a feasible procedure. We now have available for study the results of two similar series of prophylactic inoculations made at Camp Upton by Cecil and Austin[2] and at Camp Wheeler by

1. Lister, F. S.: An Experimental Study of Prophylactic Inoculation Against Pneumococcal Infection in the Rabbit and in Man, South African Institute for Medical Research, **8**: 1916; Prophylactic Inoculation of Man Against Pneumococcal Infections and More Particularly Against Lobar Pneumonia, South African Institute for Medical Research, **10**: 1917.

2. Cecil, R. L., and Austin, J. H.: Prophylactic Inoculation Against Pneumococcus, J. Exper. Med. **28**: 19 (July) 1918.

Cecil and Vaughan[3] which seem to confirm the work of Lister.

At Camp Upton Cecil and Austin used a saline pneumococcus vaccine containing Types I, II and III. Of this vaccine three or four doses were given at weekly intervals. The first dose contained three billion organisms, the final doses from six to seven and one-half billion. Some twelve thousand seasoned troops were inoculated, which number represented approximately 40 per cent. of the strength of the entire command. While the period of observation after the inoculation was unfortunately a brief one (ten weeks), definite evidence of protection was made apparent by the fact that no cases of pneumonia of Types I, II or III occurred in the vaccinated groups, while twenty-six cases due to these types of infection originated in the unvaccinated groups. Only seventeen cases of pneumonia of all types (including Type IV and the streptococcic) developed among the vaccinated as contrasted with 172 cases among the unvaccinated men.

At Camp Wheeler Cecil and Vaughan found it possible to immunize virtually 80 per cent. of the total command, but the conditions differed materially from those at Camp Upton in several respects: first, that a large number of the troops were recruits and consequently more susceptible to the disease (the difference in the susceptibility to pneumonia between seasoned troops and recruits has been recently discussed by Opie and his associates[4]); second, that the work was complicated by the influenza epidemic, and third, that a lipovaccine was substituted for the saline vaccine previously used. This vaccine, as described by Fennel,[5] contained the three types of pneumococci in a dosage of ten billion organisms per cubic centimeter and only one injection was required for complete immunization.

The study had to be discontinued when demobilization was begun, but it covered a period of approximately three months. During this time 363 cases of pneumonia of all varieties occurred among the vaccinated men (80 per cent. of the total command) and 327 cases among the unvaccinated (20 per cent. of the command); almost as many, therefore, among the unvaccinated one fifth as among the vaccinated four fifths. Excluding cases that developed within one week after the inoculation, namely, before protection of any kind could be expected to have developed, only eight cases of Type I, II and III pneumonia developed among the vaccinated men. These were all secondary to severe cases of influenza.

When the incidence of the pneumonia among recruits, on the one hand, is studied, it is found that per thousand men the incidence was twice as great for the unvaccinated as compared with the vaccinated recruit. In the seasoned troops, on the other hand, the difference was even greater, for there were almost seven times as many cases among the unvaccinated as among the vaccinated men, an observation that leads Cecil and Vaughan to the belief that the proper time to vaccinate recruits is two or three weeks before they are inducted into service in the camps. As a result of their work they have reached the conclusion that even in civil life, where pneumonia outranks other infectious diseases in the mortality list, inoculation against pneumonia will find a large field of usefulness, especially when relatively nontoxic vaccines such as lipovaccines are available. Their observation, too, that absolutely no evidence exists that such prophylactic vaccination is followed, even temporarily, by a so-called "negative phase" or period of lowered resistance to the disease against which protection is sought is also reassuring.

3. Cecil, R. L., and Vaughan, H. F.: Results of Prophylactic Inoculation Against Pneumonia at Camp Wheeler, J. Exper. Med. **29**: 457, 1919.

4. Opie, E. L., et al.: Pneumonia at Camp Funston, J. A. M. A. **72**: 108 (Jan. 11) 1919; Pneumonia Following Influenza (at Camp Pike, Ark.), J. A. M. A. **72**: 556 (Feb. 22) 1919.

5. Fennel, Eric A.: Prophylactic Inoculation Against Pneumonia, J. A. M. A. **71**: 2115 (Dec. 28) 1918.

## *Current Comment*

### THE PRUDERY OF THE PRESS

All efforts to diminish the spread of venereal diseases have encountered as a real obstruction a peculiar prudery in the American press. In his recent work on "The American Language" Mr. H. L. Mencken calls attention to the fact that the department of health in New York City in 1914 announced that its efforts to diminish venereal diseases were handicapped because "in most newspaper offices the words syphilis or gonorrhea are still taboo and without the use of these terms it is almost impossible to correctly state the problem." The Army Medical Corps in the early part of 1918 also encountered the same difficulty; most newspapers refused to print its bulletins regarding venereal disease in the Army. "One of the newspaper trade journals thereupon," Mencken says, "sought the opinions of editors upon the subject and all of them save one declared against the use of the two words." One editor placed the blame on the postoffice, and another reported that "at a recent conference of the Scripps Northwest League Editors" it was decided that "the use of such terms as gonorrhea, syphilis, and even venereal diseases would not add to the tone of the papers, and that the term vice diseases can be readily substituted." Mr. Mencken is of the opinion that the most Pecksniffian of American cities is Philadelphia, and he cites as a conspicuous example the change by the *Public Ledger* of the words "a virgin" to "a young girl." When the motion picture entitled "To Hell with the Kaiser" was advertised under government patronage, all of the Philadelphia billboards changed the announcement to read "To H—— with the Kaiser." Most of our readers know the numerous synonyms used by the press for syphilis, among them "blood poisoning," "social evil" and "social disease." Apparently the press has been unable to coin a word for gonorrhea and the subject is merely tabooed. The campaign against venereal diseases depends largely on education of the public. Is the prudery of the press to continue to hinder such education?

### FOOD AND HEALTH IN THE ARMY

The lessons of the interrelations between good physique, physical exercise and adequate nutrition, as exemplified in observations made in our army camps are too significant to be forgotten amid the altered interests of peace times. Accurate measurements were made by skilled observers on unusually large numbers of young men and as a result an exceptional amount of statistical information is now available with respect to many factors bearing on personal hygiene. Hildebrandt[1] of the Section of Food and Nutrition, Medical Department, U. S. Army, in a study of the gains made by certain recruits, found that there was an increment of several pounds in body weight, together with an unquestionable increase in the motility of the chest. This was a characteristic indication of the improvement in the physical condition of the men. The study at Camp Pike showed in an illuminating way how the gain in weight is attended with increased food consumption. Owing to the efficient service of the nutritional officers the diet in the Army has become reasonably economical, and the waste of edible food—a source of widespread complaint in the early days of the war—has been greatly reduced. Leftovers from the kitchen are being utilized in subsequent meals, and mess kits are emptied at the table. According to Hildebrandt the average energy value of the food consumed per man per day in the groups thus investigated was 3,700 calories, a figure typical of the consumption found in army messes generally. The demonstration that the typical army mess has furnished a sufficient amount of nutritious food to meet the requirements of active, vigorous young men will permit those concerned with the feeding of large groups in the future to apply these experiences to their own problems.

### NO FLIES—NO MOSQUITOES

The United States Public Health Service has just issued, and will supply in quantities, two posters which aim at arousing a general interest in the prevention and control of two insects which are responsible for a great deal of disease in this country. We refer, of course, to the mosquito and the fly. The posters, in addition to enumerating the diseases and losses produced from this source, contain detailed information in regard to the most practical measures for freeing a community from both pests. A good purpose would be served by having both posters freely displayed to focus public attention on the matter. When people realize the unnecessary economic and human loss caused by flies and mosquitoes we may be able ultimately to reach a time when towns and homes will take the same pride in displaying posters announcing the fact that they are free from mosquitoes and flies that they now take in exhibiting Liberty Loan honor flags. As one of the posters of the Public Health Service reminds us, any campaign of this sort must begin as early as practicable, for a pair of flies or mosquitoes hatched in April may give origin to millions by August. The thing to do is to keep the first pair from breeding.

1. Hildebrandt, F. M.: Some Physical Improvements in National Army Men Under Military Training, Science **49**: 404 (April 25) 1919.

## *Association News*

### THE ATLANTIC CITY SESSION

#### Moving Picture Theater to Show Scientific Work

One of the features of the Atlantic City Session, June 9-13, will be the moving picture theater, a part of the Scientific Exhibit. Casino Hall, on the second floor of the Casino, Steel Pier, has been secured. It is completely equipped with stage, screen, projecting apparatus and seats for 1,000. A continuous exhibit will be held on Tuesday, Wednesday, Thursday and Friday from 9 a. m. to 3 p. m., running through the noon hour, so that Fellows in section meetings will have an opportunity to attend the moving picture exhibit during the noon intermission. A large number of beautiful and interesting moving picture films furnished by the Medical Department of the Army, the Bureau of Medicine and Surgery of the Navy and the U. S. Public Health Service will illustrate the work of the medical officers in the Army and Navy as well as various public health questions. In addition a large number of private exhibitors will demonstrate lantern slides, roentgen-ray plates and moving picture films on various scientific subjects. A half-hour illustrated lecture will be given each day on some phase of the work on nostrums and proprietary preparations of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Admission will be free to all persons wearing the Association button. The program for each day will appear in the *Bulletin*.

## *Medical Mobilization and the War*

#### Personnel of the Medical Department

For the week ending May 16, there were 15,840 officers in the Medical Corps, a decrease of 1,720 from the previous week. The Medical Reserve Corps contained 1,915 officers. The total number of medical officers discharged since the beginning of the war is 16,302.

#### Distinguished Service Medal to Col. Frank Billings

Col. Frank Billings, Chicago, M. C., U. S. Army, has been awarded the D. S. M. for "exceptionally meritorious and conspicuous service in the organization and administration of the division of reconstruction of the medical department."

#### Distinguished Service Awards

Major-General Thomas H. Barry, U. S. Army, presented the Distinguished Service Medal to BURTON J. LEE, Col., M. C., New York City, and to HAROLD E. FOSTER, Lieut., M. C., U. S. Army, Castile, N. Y., who recently returned after eighteen months' service abroad, was twice cited by the British for bravery under fire and received the British War Cross.

#### Allied Medical Society of Northern Russia

Some weeks ago the allied medical officers of the troops in northern Russia organized the Allied Medical Society of Northern Russia. Meetings have been held every two weeks. On March 26 a meeting was held at the American Red Cross Hospital in Archangel. Cases were presented and following the presentation of each case occurred an interesting general discussion. The program included presentations by Majors J. R. Longley and W. H. Henry and Capt. C. O. Greenleaf of the Medical Corps, U. S. Army.

#### Service of Students' Corps Acknowledged

The status of the Students' Army Training Corps as an integral part of the Army has been definitely established by recent action of the War Department in amending the orders concerning the award of the Victory Medal so as to include the members of the S. A. T. C. in the list of those eligible. Following the publication of the order (G. O. 48) concerning

the award of the Service Medal by General March, the War Department was asked for a decision concerning the status of the student organizations. Some communities have asked for an opinion as to whether members of the S. A. T. C. should be included memorials. In reply to these questions the War Department has said that the members of the S. A. T. C. properly inducted into the service were on active duty in the U. S. Army and were an integral part of the land forces. This decision is acknowledgment of the service of the S. A. T. C. by the War Department.

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## HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

### *ALABAMA*

Birmingham—Bragg, J. C. (L.)
Nolan, M. M. (M.)
Blocton—Smith, E. B. (L.)
Ensley—Lovelady, R. G. (C.)
Eufaula—Fenn, J. W. (C.)
Fairhope—Hodgson, S. H. (C.)
LaFayette—Ramage, R. B. (C.)
Mobile—Oates, W. H. (M.)
Montgomery—McCall, J. W. (L.)
Selma—Doherty, D. H. (C.)
Jackson, H. F. (L.)
Tallassee—Weldon, J. M. (L.)
Tuscaloosa — McKenzie, A. B. (C.)

### *ARIZONA*

Nogalez—Wiley, C. B. (C.)

### *ARKANSAS*

Beirne—Lassiter, W. D. (L.)
Booneville—Hederick, A. R. (M.)
De Witt—Kelley, A. G. (L.)
Gregory—Maguire, F. C. (C.)
Hot Springs—King, O. H. (L.)
Little Rock—Eubanks, R. M. (C.)
Hearn, A. G. (C.)
Marvell—Brooks, G. A. (L.)
Osceola—Sheddan, W. J. (C.)
Pine Bluff—Wallin, L. (L.)
Seyppel—Ledford, H. P. (L.)

### *CALIFORNIA*

Berkeley—Forbes, H. S. (C.)
Pape, E. H. (L.)
Eagleville—Kennedy, M. R. (C.)
French Camp—Tretheway, L. E. (L.)
Livermore—Mack, C. W. (C.)
Los Angeles—Byron, R. L. (C.)
Farnsworth, D. C. (C.)
Jesberg, S. H. (C.)
Jones, I. W. (C.)
Mann, H. H. (L.)
Miller, J. L. (C.)
Myers, T. C. (C.)
Rea, R. R. (C.)
Roen, P. B. (L.)
Wilson, J. C. (C.)
Oakland—Rehfisch, J. M. (C.)
Pasadena—Mattison, S. J. (C.)
Pomona—Seaver, H. C. (C.)
Riverside—Jones, W. A. (M.)
Sacramento—Moody, A. M. (M.)
Salinas—Parker, G. (C.)
San Bernardino—McHugh, T. R. (C.)
Mills, H. W. (C.)
San Francisco — Bruman, A. K. (C.)
Falconer, E. H. (C.)
Gibson, A. C. (C.)
Kavanagh, J. J. (L.)
Woolsey, J. H. (C.)
San Jose—Richards, C. M. (C.)
San Rafael—Dufficy, R. G. (M.)
Santa Barbara—Soper, A. C. (M.)
Sawtelle—Hromadka, A. B. (C.)
Ventura—Lewis, W. J. (M.)

### *COLORADO*

Colorado Springs—Mullin, W. V. (L.)
Denver—Grant, W. W. (M.)
Hall, J. N. (M.)
Ingraham, C. B. (M.)
Ruegnitz, L. H. (L.)
Swerdfeger, E. B. (C.)
Greeley—Knowles, E. W. (C.)
Portland—Davis, T. A. (L.)

### *CONNECTICUT*

Bridgeport—Lawler, D. H. (C.)
Patterson, D. C. (C.)
Powers, J. T. H. (L.)
Schuele, G. J. (L.)
Sprague, C. H. (C.)
Hartford—Miller, J. R. (C.)
O'Brien, J. F. (L.)
Higganum—Loewe, L. J. (C.)
Meriden—Smith, D. P. (C.)
Middletown—Sandy, W. C. (C.)
New Haven—Collins, W. F. (C.)
Davidson, H. P. (L.)
Gettings, J. A. (C.)
Weed, A. R. (C.)
New London—Douglass, W. L. (L.)
Norwalk—Morrison, F. J. (L.)
Shelton—Smith, C. S. (C.)
Waterbury—Crane, A. A. (C.)

### *DELAWARE*

Lewes—Beebe, R. C. (C.)
Wilmington—Lotz, A. K. (L.)
Samuel, M. I. (M.)

### *DISTRICT OF COLUMBIA*

Washington — Randolph, B. M. (M.)
Schoenfeld, J. H. (L.)
Zinkhan, P. H. (M.)

### *FLORIDA*

Jacksonville—Mitchell, G. M. (C.)
Marianna—Hodges, G. S. (L.)
Miami—Brunner, E. C. (L.)
Panama City — Cawthon, W. D. (L.)

### *GEORGIA*

Atlanta—Derr, J. S. (M.)
Ridley, R. B., Jr. (C.)
Tribble, N. O. (L.)
Cochran—Dykes, C. Q. (L.)
Columbus—Peacock, C. A. (C.)
Dublin—Cheek, O. H. (L.)
Enigma—Parker, G. R. (C.)
Fitzgerald—McElroy, J. W. (L.)
Hilton—Reed, C. (L.)
Macon—Hinton, C. C. (L.)
Holmes, J. P. (C.)
Holmes, W. R. (L.)
Marietta—Blair, L. L. (C.)
Savannah—Turner, D. L., Jr. (C.)
Social Circle — Mobley, W. E. (L.)
Upshaw, H. L. (L.)

### *IDAHO*

Boise—Laubaugh, E. E. (C.)
St. Marcus—MacRae, R. D. (L.)

### *ILLINOIS*

Alton—Hastings, J. B. (M.)
Chicago—Black, P. (L.)
Buckman, E. (L.)
Burke, A. W. (C.)
Burmeister, W. H. (C.)
Byfield, A. F. (C.)
Cody, M. M. (L.)
Corcoran, E. A. (L.)
Flannery, R. E. (C.)
Gradle, W. S. (M.)
Gran, A. G. (L.)
Harris, C. F. (L.)
Irons, E. E. (L. C.)
Jacobson, C. A. (L.)
Kadlec, F. S. (L.)
Kraft, S. H. (C.)
McEvers, A. E. (M.)
Oliver, P. (M.)
Potts, H. A. (M.)
Reed, W. K. (L.)
Sarma, P. J. (L.)
Slaymaker, S. R. (M.)
Speed, K. (M.)
Talbot, E. S., Jr. (C.)
VanderKlott, A. (L.)
Wilcox, J. B. (L.)
Coal City—Stockdale, F. A. (C.)
Crete—Blim, S. P. (C.)
Evanston—Christopher, F. (L.)
Hagan, J. L. (C.)
Hanna City — Needham, W. S. (L.)
Homer—Tate, E. F. (L.)
Illiopolis—Dugan, R. D. (L.)
Joliet—Kimball, J. C. (C.)
Kampsville—Woltmann, F. (L.)
Kankakee—Roth, J. H. (C.)
Lawrenceville—Kirkwood, T. (M.)
Liberty—Mercer, W. E. (C.)
Naperville—Martin, W. B. (C.)
Oak Forest — Spaulding, O. R. (L.)
Oak Park—Bartling, C. H. (C.)
Potter, W. E. (C.)
Sylvester, F. M. (L.)
Peoria—Easton, S. H. (L.)
Simpson, O. W. (L.)
Plainfield—Ryden, F. A. (C.)
Rockford—Moore, H. F. (L.)
St. Peter—Yates, F. H. (L.)
Villa Grove—Herrin, P. (L.)
Woodstock—Baccus, C. F. (C.)

### *INDIANA*

Atlanta—Bills, L. F. (L.)
Brook—Larrison, G. D. (L.)
Carmel—Cooper, R. A. (L.)
Dale—McClary, D. V. (C.)
Fort Wayne—Drayer, L. P. (M.)
Ray, H. A. (C.)
Rhamy, B. W. (C.)
Fremont—Blosser, B. A. (L.)
Indianapolis—Katterhenry, E. H. (C.)
McCulloch, C. B. (L. C.)
Noble, T. B. (L.)
Royster, W. L. (C.)
Wheeler, H. H. (C.)
Winter, E. G. (L.)
Jeffersonville—Funk, A. (C.)
National Military Home—Peters, C. E. (L.)
New Harmony — Fitzgerald, K. C. (L.)
Odon—Bowman, I. E. (C.)
Princeton—Rhodes, A. H. (L.)
Seymour—Niles, J. H. (C.)
South Whitley—Hart, B. D. (L.)
Summitville—Mobley, L. F. (M.)
Terre Haute—Breaks, L. Z. (C.)
Fink, O. E. (C.)
Tipton—Recobs, R. M. (C.)
Vincennes—Bryan, C. S. (L.)

### *IOWA*

Algona—Fraser, W. (L.)
Bedford—Sollis, D. B. (L.)
Cedar Rapids — Cogswell, C. H. (M.)
Murray, F. G. (M.)
Cherokee—Johnson, C. H. (L.)
Clarion—Thompkins, E. D. (C.)
Clermont—Carr, L. L. (L.)
Council Bluffs—Hill, C. A. (C.)
McAtee, J. S. (C.)
Des Moines—Ruth, C. E. (M.)
Dubuque—Brownson, O. A. (L.)
Hampton—Rhine, A. C. (L.)
Jesup—Shimer, F. E. (L.)
Kirkman—Sabin, A. E. (C.)
Mystic—Lugar, L. L. (C.)
Oskaloosa—Johnston, K. L. (L.)
Ottumwa—Edgerly, E. T. (M.)
Herric, J. F. (M.)
Riverside—Maresh, G. (C.)
Summitville—Saar, J. L. (L.)
Waterloo — Jenks, W. H., Jr. (C.)
Webster City—Richardson, E. E. (L.)
Wellman—Austin, H. M. (C.)

### *KANSAS*

Alma—Mielke, C. H. (M.)
Garden City—Edwards, J. B. (L.)
Girard—McNaught, J. F. (L.)
Gypsum—Cheney, E. R. (L.)
Hazelton—Welsh, W. L. (C.)
Hutchinson—Mundell, W. N. (C.)
Kansas City — Boughnou, H. P. (C.)
Longton—Burr, W. B. (L.)
Sabetha—Hibbard, S. M. (C.)
Tescott—Vermillion, E. L. (L.)
Wichita—Horn, H. W. (M.)
Purves, G. K. (C.)

### *KENTUCKY*

Bowling Green—Curry, D. P., Jr. (C.)
Louisville—Kahn, L. H. (C.)
Kelly, G. C. (C.)
Koontz, F. L. (C.)
Meyers, S. J. (L. C.)
Pelle, H. L. (C.)
Pirtle, R. T. (C.)
Woodard, H. C. (C.)
Madisonville—Long, R. W. (C.)
Russell—Vidt, C. E. (L.)
Smith Grove—Grider, J. A. (L.)
Terryville—Skaggs, H. R. (L.)

### *LOUISIANA*

Alexandria—Rand, P. K. (C.)
Athens—Atkins, W. L. (L.)
Clarks—King, B. F. (C.)
Jackson—Truitt, R. C. P. (M.)
New Orleans—Bowie, E. R. (C.)
Bradburn, M. (C.)
Couret, M. J. (M.)
Fenner, E. D. (M.)
Ficklen, E. P. A. (M.)
Fortier, L. A. (L.)
Jamison, S. C. (M.)
Lacroix, P. G. (C.)
Leake, W. W. (M.)
Page, J. H. (L.)
Rhyne, A. W. (C.)
Scott, W. F. (C.)
Smyth, J. (L. C.)
Talbot, P. T. (C.)

### *MAINE*

Bangor—Peters, W. C. (M.)
Robinson, H. L. (C.)
Brewer—Ford, L. H. (C.)
Caribau—Gregory, F. L. (C.)
Madison—Vose, S. N. (L.)

### *MARYLAND*

Baltimore—Boggs, T. R. (Col.)
Brady, L. (L.)
Feldman, M. (L.)
Gaddess, H. W. (C.)
King, C. P. (C.)
Payawall, J. L. (L.)
Rosenthal, L. J. (L. C.)
Smith, D. C. W. (C.)
Thomas, E. P. (L.)
Wolfe, H. D. (C.)
Cumberland—Frantz, W. R. (C.)
Williams, W. F., Jr. (C.)
Frostburg—Cobey, J. C. (C.)
Millersville—Cecil, H. L. (C.)
Williamsport—Zimmerman, I. M. (C.)

### *MASSACHUSETTS*

Boston—Badger, G. S. C. (M.)
Binney, H. (L. C.)
Bogan, F. L. (M.)
Clute, H. M. (M.)
Erlenbach, J. H. (C.)
Green, H. (C.)
Gunter, F. C. (C.)
Lahey, F. H. (M.)
Lake, L. (L.)
Miller, R. H. (M.)
Moore, H. (M.)
Nowell, H. W. (C.)
Ober, F. R. (M.)
Papen, G. W. (C.)
Rackemann, F. M. (L.)
Ripley, H. W. (L.)
Sheehan, E. B. (C.)
Sowles, H. K. (C.)
Towne, E. B. (M.)
Vogel, G. L. (C.)
Wesselhofft, W. F. (L. C.)
Withington, P. R. (C.)
Woody, M. (L.)
Young, E. B. (C.)
Brookline——Cutler, E. C. (M.)
Cambridge—Rockwell, J. A. (M.)
Thomas, W. K. S. (M.)
Dorchester Center — Dobson, W. M. (M.)
Framingham—Glass, J. (M.)
Owen, A. S. (C.)
Lexington—Walsh, J. J. (C.)
Lowell—Jones, R. L. (C.)
Pulsifer, N. (M.)
Malden—Gay, F. W. (C.)
New Bedford — Choquette, H. (M.)
Newton—Lowry, F. P. (L.)
Rockland—Dunn, J. H. (C.)
Springfield — Chapin, W. A. R. (C.)
Johnston, C. C. (C.)
Wheat, H. R. (C.)
Taunton—Pierce, R. A. (C.)
Topsfield—Jenkins, T. L. (L. C.)
Watertown—Belding, D. L. (C.)
Waverly—Brown, C. P. (C.)
Westboro—Shealey, M. J. (L.)
Worcester—Salmon, C. A. (L.)

### *MICHIGAN*

Adrian—Stafford, L. J. (C.)
Ann Arbor — Hammell, H. H. (M.)
Karshner, R. G. (L.)
Battle Creek—Hoyt, A. A. (C.)
Bay City—Scrafford, R. E. (C.)
Detroit—Campbell, D. A. (M.)
Cullen, E. K. (M.)
Cushman, H. P. (C.)
Dodds, J. C. (M.)
Froude, P. I. (C.)
Green, S. W. (L.)
Kovinsky, A. (L.)
LaFerte, A. D. (M.)
Lawrence, W. C. (C.)

Detroit—Mayhew, D. P. (C.)
Parmeter, R. (L. C.)
Pyle, W. V. (M.)
Seeley, J. B. (C.)
Spitzley, W. A. (M.)
Stirling, A. M. (M.)
Sullivan, H. A. (C.)
Van Gundy, C. R. (L.)
Wilson, F. N. (M.)
Flint—Clift, M. W. (M.)
Randall, H. E. (M.)
Free Soil—Spencer, C. M. (L.)
Grand Rapids—Peppler, J. F. (C.)
Grosse Point—Torrey, H. N. (L. C.)
Kalamazoo—Balch, R. E. (M.)
Lake City—Doudna, J. F. (C.)
Menominee—Elwood, C. R. (C.)
Sethney, H. T. (M.)
Middleville—Swift, B. C. (C.)
Otsego—Hudnutt, O. D. (C.)
Owosso—Parker, J. O. (C.)
Plainwell—Vaughan, W. R. (L.)
Romeo—Miller, E. J. (L.)
Sault Ste. Marie—Winslow, R. C. (M.)
St. Clair—Carney, F. V. (C.)
Washington — Lockwood, C. B. (C.)

*MINNESOTA*

Holdingford—Watson, J. D. (L.)
Minneapolis—Beard, A. H. (M.)
Haskell, A. I. (C.)
Henrici, A. T. (C.)
Kremer, W. J. (L.)
Parks, A. H. (C.)
Sivertsen, I. (C.)
Morris—Fitzgerald, E. T. (C.)
Red Lake Falls—Wilkinson, J. C. (C.)
Rochester—Berkman, D. M. (M.)
Buie, L. A. (L.)
Davis, D. (C.)
Hayes, J. M. (C.)
McVay, J. R. (L.)
Mussey, R. D. (M.)
Redelings, L. H. (L.)
Vinson, P. P. (L.)
Virginia—Ground, H. T. (L.)
Walnut Grove—Jamieson, E. (C.)
Waterville — Weinburgh, H. B. (L.)

*MISSISSIPPI*

Hudsonville—Johnson, G. E. (L.)
Isola—Lester, W. C. (C.)
Jackson—Wood, J. H. (L.)

*MISSOURI*

Barnett—Leslie, J. F. (C.)
Gainesville—Evans, R. A. (L.)
Dexter—LaRue, F. (C.)
Farmington—Patton, W. G. (L.)
Iantha—Locker, G. E. (C.)
Kansas City—Aull, J. (C.)
Elliott, J. R. (C.)
Hedrick, H. B. (C.)
Henderson, J. P. (M.)
Hibbard, S. B. (C.)
Hoxie, G. H. (L. C.)
Jackson, W. R. (C.)
Kerley, G. L. (C.)
Krall, P. M. (M.)
Owens, M. J. (C.)
Shelton, W. A. (C.)
Williams, J. R. (M.)
Leutner—Wood, A. M. (L.)
Osceola—Smith, C. A. (C.)
Platte City—Coffey, G. C. (C.)
Springfield—Potts, J. M. (L.)
St. Joseph—Forstot, S. (L.)
St. Louis—Brickey, P. A. (L.)
Burdick, C. H. (L.)
Crossen, H. S. (M.)
Engleman, O. R. (L.)
Hyndman, C. E. (L.)
Lewald, J. (L.)
Loeb, V. (M.)
Macklin, L. P. (L.)
Martin, C. (M.)
McCulloch, H. (C.)
Payne, R. J. (M.)
Reilly, W. S. (L.)
Strauss, A. E. (C.)
Westlake, S. B. (C.)
White, T. W. (C.)
Young, W. B. (C.)

*MONTANA*

Bozeman—Seitz, R. E. (C.)
Butte—Flinn, H. J. (M.)
Glasgow—Hoyt, M. D. (M.)
Helena—Palmer, L. J. (C.)
Polson—Owen, G. B. (M.)
Roundup—Firey, W. I. (L.)

*NEBRASKA*

Ainsworth—Coleman, O. E. (L.)
Alma—Bartlett, W. C. (C.)
Eustis—Hale, N. T. (C.)
Hastings—Calbreath, C. B. (C.)
Hyannis—Howell, W. L. (L.)
Omaha—Stokes, A. C. (M.)
Wolcott, W. E. (L.)

*NEVADA*

Gardnerville—Howell, W. L. (L.)
Reno—McKenzie, G. (C.)

*NEW HAMPSHIRE*

Concord—Connor, H. J. (C.)
Pion, P. A. (L.)
Hanover—Bartlett, P. (M.)
Keene—Helff, J. R. (C.)
Osterhout, J. J. (C.)
Walker, C. S. (M.)
Nashua—Davis, S. G. (C.)
Seabrook—Drury, F. J. (C.)
Tilton—Huckins, T. H. (C.)

*NEW JERSEY*

Atlantic City—Weil, E. M. (C.)
Bayonne—Lipschitz, L. (C.)
Elmer—Black, M. S. (L.)
Irvington—Bowman, J. F. (L.)
Jersey City—Binder, J. (C.)
Maver, W. W. (M.)
McCamey, K. E. (L.)
Maywood—Freeland, F. (M.)
Montclair—Benson, A. L. (C.)
Newark—Belott, J. A. (L.)
Griffiths, C. B. (C.)
Heilbrunn, J. (C.)
Sanford, J. R. (C.)
Orange—Rogers, H. (C.)
Salem—Green, D. W. (C.)
Trenton—Caso, H., Jr. (L.)
West Hoboken — Denis, L. A. (C.)

*NEW MEXICO*

Carrizozo—Johnson, F. H. (L.)
Roswell—Matthews, W. C. (L.)
Springer—Murray, L. F. (L.)

*NEW YORK*

Albany—Gaus, L. H. (L. C.)
Amsterdam—Seward, W. H. (L.)
Attica—Preston, W. D. (C.)
Binghamton—Kann, U. S. (M.)
Townsend, T. I. (C.)
Brooklyn—Bourke, V. V. (C.)
Clark, G. F. (C.)
Coogan, W. J. (C.)
D'Albora, J. B. (L.)
Ducret, H. S. (C.)
Egan, W. V. (L.)
Iason, A. H. (L.)
Kramer, A. S. (L.)
Loughlin, J. T. (C.)
Marino, A. W. M. (L.)
Reiss, G. S. (C.)
Rendich, R. A. (C.)
Sammis, G. F. (C.)
Slee, A. W. (M.)
Thompson, J. E. (C.)
Zabriskie, J. B. (C.)
Buffalo—Barone, A. L. (L.)
Barone, S. (C.)
Sachs, L. M. (L.)
Ceres—Pfisterer, F. J. (C.)
Cohoes—Mitchell, J. H., Jr. (C.)
Elmira—Erway, C. H. (C.)
Turnbull, R. A. (M.)
Floral Park—Davies, T. F. (C.)
Flushing—O'Neill, J. M. (L.)
Forest Hills—Humphreys, F. B. (L. C.)
Gloversville—Ehle, V. R. (L.)
Elithorp, R. L. (C.)
Hartsdale—Pappenheimer, A. M. (M.)
Hauppage—Donaldson, B. F. (M.)
Herkimer—Huyck, R. P. (C.)
Hornell—Kysor, L. M. (C.)
Kew Gardens—Smith, H. E. (L.)
Kings Park—Rosanoff, A. J. (M.)
Sanford, W. H. (C.)
Steckel, H. A. (C.)
Kingston—Snyder, F. (C.)
Middletown—Truex, S. L. (C.)
Mount Kisco—Green, A. R. (M.)
Mount Vernon—Levine, A. A. (L.)
Phipps, W. G. (L.)
New York—Adair, F. G. (C.)
Baehr, G. (L. C.)
Bancel, H. A. (C.)
Bartholomew, H. S. (M.)
Baumann, O. L. (L.)
Black, D. R. (C.)
Blake, L. W. (C.)
Bradbury, S. (C.)
Brooks, H. (L. C.)
Butler, C. T. (L.)
Cary, E. G. (M.)
Clark, A. S. (M.)
Clifton, E. G. (C.)
Conner, L. A. (Col.)
Darlington, C. G. (C.)
Day, H. L. (L.)
De Tuncq, G. P. (L.)
Dineen, P. A. L. (L.)
Dugdale, A. H. (L.)
Echeverria, F. J. (C.)
Exiner, M. (C.)
Fitz, R. (M.)
Fleming, M. L. (C.)
Fowler, E. P. (L. C.)
Gleich, M. (L.)
Grimberg, L. (C.)
Hammer, W. J. (M.)
Henschel, L. K. (C.)
Hirsch, S. (L.)
Kinsella, R. A. (M.)
Klingon, L. E. (L.)
Kopetzky, S. J. (Col.)
Kronman, D. E. (L.)
Lambert, A. (Col.)
Landy, J. A. (L.)
Lynn, C. W. (M.)
Mannheims, P. J. (C.)
Miller, H. R. (L.)
Mosenthal, H. O. (C.)
Orth, R. D. (L.)
Paddock, R. (C.)
Pardee, H. E. B. (C.)
Prout, E. B. (L.)
Reich, A. M. (C.)
Shapiro, R. (L.)
Shine, F. W. (M.)
Slattery, G. N. (C.)
Smith, H. (L.)
Stewart, W. H. (M.)
Taylor, M. J. (L.)
Van Ingen, P. (L. C.)
Ward, M. H. (C.)
Worcester, J. N. (M.)
Oneonta—Cutler, A. W. (L. C.)
Oswego—Albertson, H. S. (C.)
Passaic—Reynolds, H. C. (M.)
Poughkeepsie—Thomson, A. W. (C.)
Rochester—Brogden, J. C. (L.)
Ewers, W. V. (L. C.)
Flynn, J. M. (C.)
Fowler, J. D. (C.)
Prince, H. L. (L.)
Sadden, H. A. (M.)
Veeder, W. H. (C.)
Rome—Williams, K. E. (C.)
Saranac Lake—Price, J. W. (M.)
Trudeau, F. B. (C.)
Saratoga Springs—Comstock, C. R. (M.)
Sidney—Loomis, R. H. (C.)
Staten Island—Herbig, F. J. (C.)
Syracuse—Barney, C. O. (C.)
Cain, M. A. (C.)
Meyers, A. D. (L.)
Sisson, W. R. (L.)
Sweet, E. V. (C.)
Van Duyn, E. S. (L. C.)
Utica—Devendorf, F. C. (C.)
Warsaw—Thomson, W. R. (C.)
Waterville—Randall, E. G. (C.)
Yonkers—Dougherty, W. J. (C.)

*NORTH CAROLINA*

Asheville—Ringer, P. H. (C.)
Charlotte—Hunter, W. M. (C.)
Garysburg—Parker, C. P. (C.)
Goldsboro—Daniels, R. L. (L.)
Mount Holly—Moore, B. D. (L.)
Saulston—Person, H. M. (L.)
Williamston—Buie, R. M. (C.)
Winston-Salem—Davies, T. W. (C.)

*NORTH DAKOTA*

Bowman—Mizener, M. (C.)
Minot—McCannel, A. J. (M.)

*OHIO*

Ada—Shank, R. A. (L.)
Akron—Wise, W. D. (C.)
Alliance—King, P. F. (C.)
Amherst—Miller, B. A. (L.)
Bellaine—Kirkland, C. W. (L.)
Bowling Green—Boyle, F. V. (M.)
Cardington—Bennett, W. S. (C.)
Cincinnati—Bader, E. R. (L.)
Behrman, O. (L.)
Betzner, C. W. (C.)
Biern, O. B. (C.)
Caldwell, J. A. (C.)
DeNeen, D. D. (C.)
Dorger, P. H. (L.)
Ford, S. (M.)
Gorton, L. W. (L.)
Morris, R. S. (L. C.)
Staley, R. W. (C.)
Twachtman, E. R. (C.)
Woodward, H. L. (M.)
Cleveland—Gernhard, W. E. (C.)
Gordon, H. J. (M.)
Hickin, F. W. (C.)
Kennerdell, T. R. (C.)
Leonard, W. M. (L.)
Luck, H. C. (C.)
Prichard, H. D. (L.)
Stoner, W. C. (L. C.)
Weihranch, H. V. (M.)
Coldwater—Schirack, C. J. (L.)
Columbus—Clark, E. M. (C.)
Grosvenor, F. B. (C.)
Conneaut—Wilson, H. (C.)
Dayton—Hewitt, A. E. (M.)
Kislig, F. K. (M.)
Webster, H. H. (L.)
Englewood—Furnas, E. E. (L.)
Glendale—Southworth, R. (C.)
Grand Junction—Shields, J. M. (C.)
Greenville—Hunter, M. C. (C.)
Kalida—Francis, W. J. (L.)
Kenton—Belt, L. L. (C.)
Lancaster—Lantz, J. M. (C.)
Lilly Chapel—Kerr, G. M. (C.)
Lima—Gamble, C. D. (M.)
Liman—Hay, V. H. (M.)
Mansfield—Smith, G. C. (C.)
McArthur—James, H. S. (L.)
Nashport—Wells, R. E. (C.)
Ottawa—Beardsley, C. O. (C.)
Pedro—Wiseman, O. (C.)
Portsmouth—Rapp, H. F. (C.)
Rock Creek—Scofield, C. (L.)
Sandusky—Graefe, H., Jr. (C.)
Shreve—Bertolette, H. B. (L. C.)
Springfield—Rinehart, J. H. (L.)
Webb, J. (C.)
Steubenville—Allsop, W. K. (C.)
Struthers—Fenton, R. W. (C.)
Toledo—Beckwith, H. K. (L.)
Beerman, J. F. (L.)
Brewer, L. A. (C.)
Eystone, F. L. (C.)
Ferneau, F. D. (M.)
Gillette, N. W. (C.)
Knisely, R. A. H. (L.)
Myers, F. (C.)
Schade, A. H. (M.)
Van Wert—Good, B. L. (L.)
Warren—Waller, C. C. (M.)
Wellston—Davis, D. W. (C.)
West Salem—Snyder, O. C. (C.)
Youngstown—Barrett, C. D. (C.)
Braun, E. J. (L.)
Buchanan, J. U. (C.)
Jones, M. P. (M.)
Neshit, D. A. (C.)
Reed, C. M. (C.)
Zanesville—Sealover, W. F. (L.)
Sellers, C. P. (M.)

*OKLAHOMA*

Atwood—Berninger, W. B. (L.)
McAlester—Kirkpatrick, G. A. (C.)
Norman—Lowther, R. D. (L.)
O'Keene—McCall, P. C. (L.)
Oklahoma City—Long, R. D. (M.)
Tecumseh—Colvert, G. W. (L.)
Tulsa—Smith, R. V. (M.)
Tyrone—Akers, W. W. D. (C.)
Washington—Nunnery, E. E. (C.)

*OREGON*

Enterprise—Hockett, C. T. (C.)
Newberg—Rankin, J. S. (C.)
Oswego—Rockey, E. W. (C.)
Portland—McCollom, J. W. (L.)
Rockey, P. (M.)
Skene, W. H. (M.)

*PENNSYLVANIA*

Allentown—Herbst, W. F. (L.)
Ardmore—Cloud, J. H. (M.)
Bloomsburg—Yost, C. B. (L.)
Bridgeville—Clarke, H. G. (C.)
Bristoria—Coen, J. A. (L.)
Carlisle—Phillipy, W. T. (C.)
Castle Shannon—Permar, H. H. (M.)
Chester—Sickel, G. B. (L.)
Webster, G. C. (L.)
Clarion—Phillips, F. P. (C.)
Coraopolis—Aten, E. J. (L.)
Corry—Kibler, J. C. (L.)
Derry—Crouse, C. C. (C.)
Fountain Springs—Mauser, R. F. (C.)
Franklin—Thompson, E. V. (L.)
Greensburg—Potts, W. J. (C.)
Grove City—Montgomery, B. A. (C.)
Wilson, H. S. (C.)
Hershey—Zimmerman, J. L. (L.)
Houtzdale—McKenzie, W. R. (C.)
Jenkintown—Hopkinson, R. D. (C.)
Jersey Shore—Goodman, L. M. (M.)
Johnstown—Penrod, H. H. (C.)
Scharmann, F. G. (C.)
Lancaster—Pomerantz, H. (C.)
McKeesport—Wiley, J. C. (C.)
Millsboro—Hawkins, W. J. (L.)
Monongahela—Hays, G. K. (C.)
Mount Carmel—Samuel, E. R. (C.)
Nanticope—Heyer, F. W. (C.)
New Brighton—Boots, R. H. (C.)
Norristown—Jaffe, S. (M.)

Osceola Mills—Lynn, A. C. (C.)
Philadelphia—Ashton, W. E. (L. (C.)
Austin, J. P. (M.)
Bates, W. (M.)
Bethel, J. P. (C.)
Blair, M. W. (L.)
Buerki, R. C. (L.)
Carnett, J. B. (L. C.)
Carpenter, C. (C.)
Coplin, W. M. L. (L. C.)
Edwards, T. F., Jr. (C.)
Ezickson, W. J. (C.)
Flick, J. B. (C.)
Gerhard, A. H. (L.)
Hodge, E. B. (L. C.)
Jopson, J. H. (L. C.)
Kane, L. A. (C.)
Keene, F. E. (M.)
Knowles, F. C. (M.)
Krumbhaar, E. B. (M.)
McCloskey, E. W. (C.)
McConaughey, J. C. (L.)
Mitchell, C. F. (L. C.)
Murfin, J. G. (C.)
Old, H. (M.)
Outerbridge, G. W. (C.)
Owen, H. R. (C.)
Picard, H. L. (C.)
Post, J. W. (L.)
Roddy, J. A., Jr. (M.)
Speese, J. (M.)
Turner, J. (C.)
Whitaker, W. (C.)
Wilmer, H. B. (C.)
Woods, A. C. (M.)
Zulick, J. D. (M.)
Pittsburgh—Baer, H. L. (L.)
Caldwell, B. W. (Col.)
Cashman, B. Z. (C.)
Chatham, E. T. (C.)
Clark, E. P. (C.)
Cohen, M. A. (L.)
Colwell, A. H. (C.)
Cunningham, W. L. (L.)
D'Zmura, A. P. (C.)
Fredette, J. W. (C.)
Frodey, R. J. (C.)
Gold, J. B. (C.)
Jacob, F. M. (C.)
Larimore, F. C. (L.)
Long, H. M. (C.)
Maits, C. B. (C.)
Matheny, A. R. (C.)
Probst, W. J. (L.)
Rinehart, S. M. (M.)
Sieber, P. R. (M.)
Simpson, J. R. (M.)
Simpson, K. S. (C.)
Smith, S. S. (M.)
Snowden, R. R. (C.)
Zurhorst, E. W. (M.)
Pittston—Burke, J. P. (M.)
Punxsutawney—Musser, G. M. (M.)
Roaring Branch—Castlebury, G. D. (C.)
Scranton—Gibbs, H. W. (C.)
Goodman, D. A. (L.)
Otoole, J. E. (C.)
Stoneboro—Buckley, C. J. (L.)
Sugar Notch—Caffrey, J. J. (C.)
Wawa—Keating, P. M. (C.)
Wellsboro—Bodine, F. S. (C.)
Wilkes-Barre—Cressler, J. W. (C.)
Wyoming—Smith, A. B. (C.)

*RHODE ISLAND*

Central Falls—Bernard, W. P. (C.)
Pascoag—Daley, T. V. (C.)
Providence—Blair, F. L. (M.)
Breslin, R. H. (C.)
Gormly, C. F. (M.)
Hawkes, C. E. (C.)
Mulvey, W. A. (C.)
Riverside—Hascall, T. C. (C.)
Warren—Drowne, F. P. (C.)

*SOUTH CAROLINA*

Barnwell—Patterson, E. L. (C.)
Batesburg—Edwards, J. B. (C.)
Charleston—O'Driscoll, W. C. (M.)
Easley—Bolt, J. L. (C.)
Florence—Smyser, J. D. (C.)
Greenville—Parker, J. W. (C.)
Olar—Ray, C. B. (C.)
Orangeburg—Schiffley, H. T. (C.)
Sumter—Mills, W. E. (L.)
Weinberg, M. (L.)

*SOUTH DAKOTA*

Redfield—Sutton, D. (L.)
Vermilion—Brookman, L. J. (L.)

*TENNESSEE*

Johnson City—Reeves, E. W. (C.)
Knoxville—Hill, L. D., Jr. (C.)
London—Robinson, H. (L.)
Memphis—McGehee, J. L., Jr. (M.)
Murfreesboro—Murfree, M. B. (C.)
Nashville—Brown, E. E. (C.)
Bryan, O. N. (C.)
Givan, T. B. (L.)
Newport—Hampton, J. E. (C.)
Trenton—Matthews, E. C. (L.)

*TEXAS*

Austin—Beverly, A. F. (M.)
Watt, W. E. (C.)
Beeville—Prather, R. M. (L.)
Bronte—Chambers, W. F. (L.)
Dallas—Aiguier, R. L. (L.)
Lott, M. E. (L. C.)
McBride, R. B. (M.)
McLaurin, J. G. (C.)
Talmage, D. S. (C.)
Eden—Lockhart, J. P. (L.)
Ennis—McRea, W. T. (L.)
Fort Worth—Montgomery, J. T. (C.)
White, J. E. (C.)
Franklin—Sharp, A. J. (L.)
Galveston—Flynn, J. G. (M.)
Georgetown—Randolph, V. P. (C.)
Handley—Lorimer, W. S. (L.)
Houston—Aydam, C. W. (C.)
Bertner, E. W. (C.)
Cooke, E. F. (C.)
Kenedy—Kent, C. M. (C.)
Kingsville—Shelton, J. H. (C.)
Laneville—Galloway, A. H. (L.)
Moody—Miller, G. (L.)
San Antonio—Bonner, W. F. (C.)
Shive—Chandler, C. E. (C.)
Terrell—Standifer, C. H. (C.)
Thorndale—Lawrence, E. L. (L.)

*UTAH*

Salt Lake City—Allen, D. K. (C.)
Mayo, H. N. (M.)
Stevenson, T. W. (C.)

*VERMONT*

Montpelier—Harriman, F. W. (C.)
Underhill Center—Fogg, A. L. (L.)

*VIRGINIA*

Abingdon—Smith, F. H. (L.)
Ballston—Wellburn, W. C. (C.)
Boykins—Musgrave, G. H. (M.)
Bristol—Ardan, N. I. (M.)
Cambria—Ryder, O. A. (L.)
Charlottesville — Lankford, B. (M.)
Chase City—Brooks, E. B. (L.)
Colonial Beach—Brent, W. L. (C.)
Danville—Miller, E. H., Jr. (M.)
Fredericksburg—Mass, U. (L. C.)
Hopewell—Stallard, S. L. (L.)
Lynchburg—Kyle, B. H. (M.)
New Church—Critcher, C. E. (C.)
Norfolk—Hume, J. S. (L.)
Orange—Scott, F. G., Jr. (C.)
Petersburg—Trivette, W. A. (L.)
Richmond—Blanton, W. B. (C.)
Fitzgerald, J. O., Jr. (L.)
Fletcher, F. P., Jr. (L.)
Fravel, R. C. (C.)
Hodges, F. M. (M.)
McKinney, J. T. (C.)
Phillips, C. (C.)
Porter, W. B. (M.)
Whitehead, L. J. (L.)
Roanoke—Boyd, J. O. (L.)
Staunton—Martin, J. L. (L.)
Suffolk—Gay, W. T. (L.)
University—Goodwin, W. H. (L. C.)
Witt, D. H. (M.)
Woodbery, H. S. (C.)

*WASHINGTON*

American Lake—Dudley, H. D. (C.)
Anacortes—Shaw, A. (C.)
Bellingham—Smith, J. S. (L.)
McCleary—Fleming, B. E. (L.)
Okanogan—Dewey, L. S. (L.)
Randle—Lauman, U. M. (L.)
Seattle—Carroll, F. M. (M.)
West, P. C. (C.)
Spokane—Frost, W. S. (M.)
Hendricks, R. (M.)
Whittaker, F. J. (M.)
Tacoma—Montague, E. A. (C.)
Whitacre, H. J. (L. C.)

*WEST VIRGINIA*

Ben Bush—Cayce, J. S. (L.)
Charleston—Mendeloff, M. I. (L.)
Hinton—James, M. C. (M.)
Hurricane—Roberson, G. C. (C.)
White Sulphur Springs—Myles, W. E. (L.)

*WISCONSIN*

Chippewa Falls—Law, W. G. (C.)
Eau Claire—Derge, H. F. (L.)
Elkland—Maercklein, A. G. (L.)
Fond du Lac—Schlesselman, G. H. (L.)
Grand Rapids—Pomainville, F. X. (M.)
Greenbush—Cary, F. (M.)
Lancaster—Fowler, J. H. (C.)
Milwaukee—Baum, E. L. (C.)
Milwaukee—Black, N. M. (L. C.)
Kampmeier, A. J. (L.)
Segal, G. M. (L.)
Yaffe, A. (L.)
Mineral Point—Ludden, H. D. (C.)
Richland Center—Breeden, R. F. (C.)
Ripon—Foat, J. S. (C.)
Sheboygan—Barrett, E. J. (M.)
Stratford—Fuller, C. O. (L.)
Wauwatosa—Cutler, J. S. (C.)

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## ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

### Alabama

*To Fort Crockett, Texas,* from Fort Oglethorpe, Lieut. E. C. HAGLER, Northport.

### Arkansas

*To Camp Pike, Ark.,* base hospital, from Camp Jackson, Major M. D. OGDEN, Little Rock.

### California

*To San Francisco, Calif.,* Letterman General Hospital, from Camp Dix, Capt. A. L. FISHER, San Francisco; from Camp Lewis, Capt. J. CARLING, Los Angeles; from Eastview, Capt. A. P. HIGGINS, Sacramento.

### Colorado

*To Fort Des Moines, Iowa,* from Eastview, Lieut. C. E. CONDON, Breckenridge.

### District of Columbia

*To Camp Sherman, Ohio,* base hospital, from Camp Dix, Major C. L. HALL, Washington.

*To Hoboken, N. J.,* from Army Medical School, Lieut.-Col. E. R. WHITMORE.

*To report to the commanding general,* Philippine Department, from Camp Meade, Capt. I. A. PELZMAN, Washington.

### Florida

*To Mineola, N. Y.,* Hazelhurst Field, from Arcadia, Lieut. H. T. DOUST.

### Georgia

*To Camp Benning, Ga.,* from Camp Dix, Capt. J. D. MAULDIN, New Holland.

*To Camp Grant, Ill.,* base hospital, from Camp Sherman, Capt. W. E. MEANWELL, Columbia.

*To Camp Jackson, S. C.,* base hospital, from Camp Greene, Lieut. H. L. JOHNSTON, Argyle.

*To Camp Sherman, Ohio,* base hospital, from Camp Gordon, Capt. W. E. QUILLIAN, Atlanta.

*To Fort McPherson, Ga.,* from Camp Gordon, Major E. V. KELLER, Atlanta.

*To Hoboken, N. J.,* Capts. A. O. MEREDITH, Hartwell; T. E. PUGH, Talbotton.

### Illinois

*To Camp Grant, Ill.,* from Camp Sherman, Lieut. R. F. DOWELL, Elgin. As tuberculosis examiner from Camp Sherman, Lieut. G. K. FENN, Chicago Heights.

*To Colonia, N. J.,* from Camp Dix, Lieut. S. H. EASTON, Peoria.

*To Detroit, Mich.,* from Camp Dix, Capt. B. M. CONLEY, Wilmette; from New York, Capt. T. REED, Chicago.

*To Fort Sheridan, Ill.,* from Camp Bowie, Capt. J. F. CLARK, Chicago; from Camp Jackson, Lieuts. F. W. FIEDLER, Batchtown; P. A. STEELE, Chicago.

*To New Haven, Conn.,* from Camp Dix, Lieut. L. W. ELSTON, Chicago.

*To San Francisco, Calif.,* Letterman General Hospital, from Camp Sherman, Capt. C. M. McKENNA, Chicago.

The following order has been revoked: *To Camp Dix, N. J.,* from Camp Custer, Capt. E. H. PARRY, Galesburg.

### Indiana

*To Camp Knox, Ky.,* camp hospital, from Camp Abraham Eustis, Lieut. C. E. QUINN, Burlington.

*To Camp Lee, Va.,* base hospital, from Biltmore, Lieut. J. W. THOMSON, Garrett.

*To Fort Benjamin Harrison, Ind.,* from Camp Dodge, Capt. E. K. SCHURTZ, Waterloo; from Camp Gordon, Capt. C. S. ROSENBURY, South Bend.

*To Fort Riley,* from Camp Sherman, Capt. O. EVERMAN, Indianapolis.

*To Washington, D. C.,* from Camp Dix, Lieut.-Col. H. O. BRUGGEMAN, Fort Wayne.

### Kansas

*To Fort D. A. Russell, Wyo.,* from Camp Dix, Capt. F. B. SHELDON, Manhattan.

*To Fort McHenry, Md.,* Major L. A. CLARY, Hutchinson.

*To Fort Riley,* as tuberculosis examiner, from Camp Meade, Major E. H. JOHNSON, Peabody. Base hospital, from Camp Dix, Capt. W. H. CARTER, Wichita.

*To Fox Hills, N. Y.,* from Camp Dix, Capt. J. D. COOK, Topeka.

### Kentucky

*To Camp Zachary Taylor, Ky.,* base hospital, from Camp Abraham Eustis, Lieut. H. H. RICHESON, Campbellsville; from Camp Dix, Capt. O. R. MILLER, Louisville.

*To Denver, Colo.,* from Fort Bayard, Capt. J. R. PEABODY, Louisville.

### Maryland

*To Fort McHenry, Md.,* from Camp Jackson, Capt. J. H. TRABAND, Jr., Baltimore.

*To Hoboken, N. J.,* Capt. C. R. BROOKE, Baltimore.

*To Philadelphia, Pa.*, from Camp Grant, Major F. W. RANKIN, Baltimore.

### Massachusetts

*To Boston, Mass.*, from Camp Dix, Lieut. R. A. ROCHFORD, Springfield; from Camp Jackson, Capt. N. A. GALLAGHER, Malden.
*To Canal Zone*, from Garden City, Capt. H. K. TUTTLE, Tewksbury.
*To Cape May, N. J.*, from Walter Reed General Hospital, Lieut. G. E. DEERING, Worcester.
*To Denver, Colo.*, from Lakewood, Lieut. A. G. C. SCHNACK, Boston.
*To Detroit, Mich.*, from Cape May, Lieut. J. B. A. JOHNSON, Lowell.
*To Fort Bayard, N. M.*, from Camp Dix, Capt. H. E. CARNEY, Boston.
*To Fort McHenry, Md.*, from Camp Dix, Capt. J. H. McGUIRE, Boston.
*To Fox Hills, N. Y.*, from Camp Dix, Capt. F. R. SIMS, Melrose.
The following order has been revoked: *To Camp Upton, N. Y.*, base hospital, from Hoboken, Lieut. L. S. KEMP, Canton.

### Michigan

*To Chicago, Ill.*, from Camp Jackson, Capt. E. SMITH, Jr., Detroit.
*To Detroit, Mich.*, from Camp Custer, Lieut. W. H. NILES, Marshall.
*To report to the commanding general*, Western Department, from Fort Schuyler, Lieut. S. M. WELLS, Jr., Grand Rapids.
*To Walter Reed General Hospital, D. C.*, from Camp Custer, Lieut.-Col. C. J. BARTLETT.
*To Wichita Falls, Texas*, Call Field, from San Antonio, Lieut. J. L. DESROSIER, Detroit.

### Minnesota

*To Camp Sherman, Ohio*, from Camp Custer, Lieut. L. W. ANDERSON, Atwater
*To Fort Snelling, Minn.*, from Camp Dix, Lieut. H. E. HULSICK, St. Paul; from Camp Dodge, Lieut.-Col. J. C. STALEY, St. Paul.

### Mississippi

*To Fort Oglethorpe*, from Eastview, Capt. J. T. HOSEY, Enterprise.

### Missouri

*To Army Medical School* for instruction, from Camp Dix, Capt. D. E. MACKEY, Clayton.
*To Fort Riley*, base hospital, from Plattsburg Barracks, Capt. H. M. LARUE, Kansas City.
*To Garden City, N. Y.*, from Hoboken, Lieut. H. O. LIENHARDT, North Kansas City.
*To St. Louis, Mo.*, from Camp Dix, Lieut. H. D. HAVARD, Sedalia.

### Nebraska

*To Denver, Colo.*, from Otisville, Major W. N. ANDERSON, Omaha.
*To Fort Bayard, N. M.*, from Camp Dix, Capt. R. WOODS, Haigler.
*To Fort D. A. Russell, Wyo.*, from Chicago, Capt. C. L. FAHNESTOCK, McCook.
*To Mineola, N. Y.*, Hazelhurst Field, from Fort Crook, Lieut. J. J. LANCER.

### New Jersey

*To Columbus Barracks, Ohio*, from Hoboken, Col. C. L. WILLCOX.
*To Fort Snelling, Minn.*, from Lakewood, Capt. R. D. SCHIMMELPFENNIG, Montclair.
*To New Haven, Conn.*, from Camp Dix, Major R. D. WOLFE.
*To Oteen, N. C.*, from Lakewood, Lieut. J. B. ANDERSON.
*To Vancouver Barracks, Wash.*, from Camp Dix, Col. F. C. BAKER.
*To Walter Reed General Hospital, D. C.*, from Hoboken, Lieut. C. D. PILLSBURY.

### New York

*To Army Medical School* for instruction, from Walter Reed General Hospital, Lieut. D. D. KRUPP, Brooklyn.
*To Camp Lee, Va.*, from Camp Jackson, Capt. O. H. JOHNSON, New York.
*To Camp Sherman, Ohio*, base hospital, from Camp Dix, Capt. W. J. TRACY, Hornell.
*To Camp Zachary Taylor, Ky.*, from Camp Sherman, Lieut. J. C. O'NEILL, New York. *To examine the command* for cardiovascular diseases, from Lakewood, Lieut. H. C. FUHRMAN, Brooklyn.
*To Carlisle, Pa.*, from Camp Dix, Major R. H. FOWLER, Brooklyn.
*To Eastview, N. Y.*, from Plattsburg Barracks, Lieut. J. W. MAMBERT, Hudson.
*To Fort McHenry, Md.*, from Camp Jackson, Major W. W. WEEKS, New York.
*To Fort Sheridan, Ill.*, from Camp Dix, Major R. N. SEVERANCE, Staten Island; Capt. C. S. LITTLE, Thiells.
*To Fort Totten, N. Y.*, from Camp Sherman, Capt. L. B. MOUNT, Albany.
*To Fox Hills, N. Y.*, from Camp Jackson, Capt. E. C. FOSTER, Penn Yan; from Plattsburgh Barracks, Capt. W. G. DICKINSON, Oneonta; from Washington, D. C., Lieut.-Col. W. B. REID, Rome; from West Point, Major D. L. WINN.
*To New Haven, Conn.*, from Camp Meade, Lieut. A. ALTSCHUL, New York.
*To Newport News, Va.*, from Hoboken, Capt. R. F. ZIMMERMAN, Elmhurst.
*To Walter Reed General Hospital, D. C.*, from Lakewood, Lieut. R. E. CUMMING, New York.
The following order has been revoked: *To Fort McHenry, Md.*, from Camp Dix, Lieut.-Col. J. W. JAMESON, New York.

### North Carolina

*To Washington, D. C.*, Surgeon-General's Office from Camp Jackson, Capt. R. S. CLINTON, Gastonia.

### Ohio

*To Camp Meade, Md.*, from Camp Alfred Vail, Lieut. W. H. STRATHMANN, West Toledo. As tuberculosis examiner, from Lakewood, Lieut. I. B. SMOCK, Canton.
*To Camp Sherman, Ohio*, base hospital, from Fort Snelling, Lieut. C. R. FISHEL, Thurston.
*To Carlisle Pa.*, from Camp Jackson, Lieut. R. G. GROSSMAN, Cleveland.
*To Fort Benjamin Harrison*, from Camp Gordon, Capt. F. W. HITCHINGS, Cleveland.
*To Fort Sheridan, Ill.*, from Camp Dix, Major A. MacIVER, Marysville.
*To Hoboken, N. J.*, Capts. W. C. DAVIS, East Liberty; G. R. CURL, Edgerton; Capt. C. G. LYONS, National Military Home.

### Oklahoma

*To Camp Pike, Ark.*, base hospital, from Camp Dix, Lieut. J. J. CAVINESS, Altus; from Fort Oglethorpe, Capt. W. W. WOODY, Tulsa.

### Pennsylvania

*To Camp Abraham Eustis, Va.*, from Walter Reed General Hospital, Lieut. C. L. McCOY, Pittsburgh.
*To Detroit, Mich.*, from Camp Dix, Capt. G. W. VAN GORDER, Pittsburgh.
*To Fort McHenry, Md.*, from Camp Jackson, Capt. S. R. SKILLERN, Jr., Philadelphia.
*To Fort McPherson, Ga.*, from Camp Gordon, Capt. G. P. ARD, Woodward.
*To Hoboken, N. J.*, Major M. C. BURNS, Philadelphia; Capts. E. A. MILLER, East Berlin; W. VAN DOLSEN, Philadelphia.
*To Pittsburgh, Pa.*, from Camp Dix, Lieut. J. H. SEIPEL, Pittsburgh.
*To Walter Reed General Hospital, D. C.*, from Lakewood, Capt. J. H. GALBRAITH, Altoona.
The following orders have been revoked: *To Camp Dix, N. J.*, from Camp Lee, Lieut. J. G. LOGUE, Williamsport. *To Detroit, Mich.*, from Camp Dix, Lieut. F. P. McCARTHY, Erie. *To Fort McHenry, Md.*, from Surgeon-General's Office, Lieut.-Col. E. L. ELIASON, Philadelphia.

### Rhode Island

*To Walter Reed General Hospital, D. C.*, from Camp Dix, Major W. McDONALD, Jr., Providence.

### Tennessee

*To Camp Zachary Taylor, Ky.*, base hospital, from Camp Dix, Capt. C. M. GRIFFITH, Tullahoma.
*To Fort McPherson, Ga.*, from Camp Upton, Lieut. C. E. WARDE, Memphis.

### Texas

*To Fort Bayard, N. M.*, from Fort Crockett, Lieut. W. L. PARKER, Temple.
*To Fort Sam Houston, Texas*, base hospital, from Camp Grant, Lieut. F. O. CALAWAY, Austin.
*To Marfa, Texas*, camp hospital, from Camp Dix, Lieut. D. SPANGLER, Sherman.

### Virginia

*To Camp Meade, Md.*, base hospital, from Fort Oglethorpe, Major J. C. MOTLEY, Abingdon.
*To Fort McHenry, Md.*, from Walter Reed General Hospital, Capt. E. B. DOVELL, Uno.
*To Hoboken, N. J.*, Capt. R. L. OZLIN, Dundas.

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## ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. H. R. CARTER, proceed to the Bureau of conference regarding future plans for malaria work.

Asst. Surg.-Gen. C. C. PIERCE, proceed to Baltimore, Md., for conference relative to venereal disease control measures. Proceed to New York, N. Y., to present an address on the Public Health Service program for venereal disease control.

Surg. L. D. FRICKS, proceed to the Bureau to attend conference regarding future plans for malaria work.

Surg. CARROLL FOX, proceed to Boston, Mass., to attend a meeting of a committee of the American Public Health Association to formulate general standards of health legislation.

Surg. JOSEPH GOLDBERGER, attend the meeting of the American Medical Association at Atlantic City, N. J., June 9-13.

Surg. G. W. McCOY, attend the meeting of the American Medical Association at Atlantic City, N. J., June 9-13.

Surg. H. M. MANNING, relieved at the Charleston, S. C., quarantine station. Proceed to the marine hospital, Memphis, Tenn., and assume charge.

Surg. H. M. BRACKEN (Reserve), detailed as supervisor of district No. 10 for the organization and administration of certain agencies for the care of War Risk patients, headquarters at St. Paul, Minn.

Passed Asst. Surg. A. R. SWEENEY, proceed to Washington, D C., for conference relative to rural sanitation in Cumberland County, N. C.

Passed Asst. Surg. C. V. AKIN, attend Southern Sociological Conference at Knoxville, Tenn, May 12-14.

Passed Asst. Surg. C. H. WARING, detailed as supervisor of district No. 6 for the organization and administration of certain agencies for the care of War Risk patients, headquarters at New Orleans, La.

Asst. Surg. J. K. FULLER, relieved at Newport News, Va., proceed to Washington, D. C., for duty in the division of marine hospitals and relief.

Consulting San. CHARLES BOLDUAN, proceed to Atlantic City, N. J., on or about May 6, 1919, for duty in connection with the exhibit at the meeting of the American Medical Association.

Acting Asst. Surg. J. J. DURRETT, proceed to Charlottesville, Va., when necessary to advise the city health authorities regarding scavenger and sewage system.

Acting Asst. Surg. R. A. JEWETT, proceed to Atlantic City, N. J., for duty in installation of Public Health Service exhibit at the meeting of the American Medical Association.

Acting Asst. Surg. G. C. JONES, proceed to Greenville, S. C., for duty in the Public Health Service Hospital.

Acting Asst. Surg. J. C. TRAVERS, proceed to Greenville, S. C., for duty in the Public Health Service Hospital.

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

## ILLINOIS

**Unlicensed Practitioner Guilty.**—Mr. Peter Cartsoles of 520 North Green Street, Chicago, was arrested by the Department of Registration and Education of the State of Illinois for practicing medicine without a license. The court found him guilty and paroled him for one year to a probation officer in Chicago.

**Personal.**—Dr. Charles A. Eames, assistant chief surgeon of the National Soldiers' Home, Danville, for seven years, has been transferred to the central branch hospital of the National Soldiers' Home, Dayton, Ohio.——Robert L. Morris, Major, M. C., Illinois N. G., Decatur, has been placed in charge of the Medical Corps organized at Danville.

**The First Blind Massage Class in America.**—The Chicago Lighthouse, an Illinois organization for helping the blind, in 1918 instituted for these unfortunates a class in massage, which has recently been graduated. The class was composed of six men and two women, carefully selected from a large group of blind people by Mr. Peter Peel and Dr. Jacob W. Bolotin, Chicago, the blind heart and lung specialist. The training consisted of an eleven month course conducted according to the system used at St. Dunstan's Hostel for the Blind of England, where massage was successfully taught to blinded soldiers as early as 1915. The founder of this institution, Sir Arthur Pearson of London, sent for the use of the American class, fifteen books in revised British Braille. These books are a compilation of the technical knowledge obtained from a digest of the most scientific works written on the subject by such authors as Ashby, Cunning, Halleburton, Hudson, Palmer, Kurre W. Ostrom, G. F. Stout and Dr. Justina Wilson. The students were instructed in anatomy by Dr. Bolotin and received their technical training from Mr. Peel. They were found to be very adaptable to the work and became most efficient masseurs. Mr. Peel plans to take two of the graduates at a time into his office to serve an internship of a few months, during which time they receive a remuneration of from $20 to $25 a week. He requests Chicago physicians to cooperate with him in this worthy undertaking by sending patients to these masseurs, especially poor patients who cannot afford to pay for the services rendered, so that the masseurs may have an opportunity of receiving more practical experience. Further information may be obtained by communicating with Mr. Peel at 20 West Jackson Boulevard; telephone, Harrison 8128.

### Chicago

**Course in Dietitics.**—The Bureau of Dietitian Service of the American Red Cross has arranged through the Chicago Chapter Teaching Center to hold a course in dietetics at hospital training schools for nurses. Any school which has not already a visiting dietitian will be assisted by the Red Cross on application to Mrs. L. P. Mehlig, Dietetics Department, Chicago Chapter Teaching Center, American Red Cross.

**Personal.**—Dr. Boleslaus Klarkowski has been appointed a member of the board of education for four years.——Dr. Haim I. Davis, Major, American Red Cross, has returned after two months' study of the situation in Poland and Galicia.——Dr. Frank J. Norton has gone overseas for duty with the Y. M. C. A.——Major Samuel J. Walker, American Red Cross, who headed a relief commission into Bulgaria, has returned to his work in Macedonia.——Judge Joseph B. David, in the superior court, May 17, set aside the verdict of $6,500, returned by a jury the previous day against Dr. Daniel A. K. Steele, in a damage suit for $50,000 brought by Miss Dell D. Nichols, who claimed because of an operation performed by Dr. Steele she lost her voice. Judge David held that there was nothing in the evidence which would indicate that the operation was the cause of the plaintiff's misfortune. ——Dr. Haldane Cleminson, charged with the murder of his wife in 1909, and imprisoned in the state penitentiary in Joliet, since 1911, has been recommended to Governor Lowden for discharge from prison.

## IOWA

**Homeopathic College Discontinued.**—It is reported that at the last meeting of the Iowa legislature the College of Homeopathic Medicine of the State University of Iowa was discontinued and an elective chair in homeopathic materia medica and therapeutics was incorporated in the state college of medicine. This chair is to be occupied by Dr. George Royal, Des Moines, former dean of the College of Homeopathic Medicine.

**New State Officers.**—At the sixty-eighth annual meeting of the Iowa State Medical Society, held in Des Moines, May 7 to 9, under the presidency of Dr. Max E. Witte, Clarinda, the following officers were elected: president, Dr. William L. Allen, Davenport; president-elect, Dr. Donald Macrae, Jr., Council Bluffs; vice presidents, Drs. George C. Stockman, Mason City, and Granville N. Ryan, Des Moines. About 700 members were in attendance at this meeting, and Des Moines was selected as the next place of meeting.

**Personal.**—Dr. Walter L. Bierring, Des Moines, a member of the National Board of Medical Examiners, has secured passports and will leave next month on a mission to England, France and Italy. The board of which he is a member has been appointed to consult with national examining boards of other countries looking toward the securing of a uniformity of examinations, which will permit the issuance of world certificates.——Dr. Benjamin Thompson, Tama, on May 14, celebrated the fiftieth anniversary of his entrance into the practice of medicine in Tama County.——Dr. James F. Battim has succeeded Dr. Alpheus B. Conaway, as city physician of Marshalltown.——Dr. Loren K. Meredith, Des Moines, has been appointed by the state board of health to superintend the carrying out of the new venereal disease act, which was recently passed by the general assembly.——Pearl Spanswick, Des Moines, has been appointed state bacteriologist. ——David S. Fairchild, Col., M. C., U. S. Army, Clinton, chief surgeon of the Rainbow Division, has returned from abroad.

## KANSAS

**County Society Organized.**—Physicians of Osborne County met at Osborne, May 2, reorganized the Osborne County Medical Society and elected the following officers: president, Dr. James E. Henshall; vice president, Dr. Benjamin F. Chilcott, and secretary-treasurer, Dr. Samuel J. Schwaup, all of Osborne.

**State Society Meeting.**—The fifty-third annual meeting of the Kansas Medical Society was held in Ottawa, May 7 and 8, under the presidency of Dr. William S. Lindsay, Topeka. It was announced by the president that 651 physicians of Kansas, or nearly one half of the practitioners of the state, have been in the service of the United States in some capacity during the war. Dr. Elmer E. Liggett, Oswego, was elected president, and Hutchinson was selected as the place of meeting for 1920.

## MARYLAND

**Personal.**—Dr. Clement A. Penrose, who has been seriously ill for the past eight weeks at his home in Baltimore, has been removed to the Church Home and Infirmary, where he has undergone a severe operation and is reported as doing well.——Albert G. Singewald, Major, M. C., U. S. Army, Baltimore, who served overseas, has returned and entered U. S. Army General Hospital No. 2, at Fort McHenry, for treatment.

**Hospital for Tuberculous Negro.**—Plans for a sanatorium for the tuberculous negro, which was authorized by the last legislature, are being developed now by the board of directors of the Maryland State Sanatorium. The legislature appropriated a total of $75,000 to start the work, $50,000 in this fiscal year and $25,000 in the next. The members of the board assume that the state will be reasonable in making future appropriations and expect to have considerably more money to put into the construction of the institution. There is the most vital need for an adequate institution that will care for the tuberculous negro. It is said to be practically settled that the hospital will be located near Baltimore. In this location, the institution can get its water, light and sewage facilities from the city, and thus avoid the expense of building its own plants. A hospital for at least 100 beds at the outset is under consideration.

## MASSACHUSETTS

**New Hospital.**—The new Norfolk County tuberculosis hospital at Braintree Highlands, recently established at a

cost of $365,000, has been formally dedicated. The hospital has a total capacity of seventy-five patients although twenty-five additional patients can be installed without overcrowding.

**Personal.**—Joel E. Goldthwait, Col., M. C., U. S. Army, Boston, who commanded the reconstruction hospital in France under the direction of the Massachusetts General Hospital Unit, has returned to the United States.——Dr. Charles W. Bartlett, Marshfield, has been reappointed medical examiner (coroner) of the Fifth Plymouth District.——Dr. William J. Gallivan, Boston, has been reappointed a member of the health council.——Dr. George L. West, Newton, has been reappointed medical examiner (coroner), and Dr. T. Morton Gallagher, associate medical examiner, for the Seventh Essex District.——Dr. Dudley A. Sargent, Cambridge, widely known expert on physical education, for forty years, director of the Hemingway Gymnasium of Harvard University, has resigned, but will continue to direct the Normal School of Physical Education.——Dr. Seth L. Strong, Marshfield Hills, who has been teaching surgery for several years in the Royal Medical College at Bangkok, Siam, has returned to the United States on account of ill health.——Dr. Bernard W. Carey, Winthrop, epidemiologist of the state department of health, has been appointed director of the division of communicable disease, succeeding Dr. John S. Hitchcock, Northampton, resigned.——Dr. George H. Bigelow, Boston, recently returned after service in the epidemiologic department of the Army in France, has been appointed temporary epidemiologist of the state board of health, succeeding Dr. Carey.

## MISSISSIPPI

**Mississippi Registration Area.**—Official notification has been received by the state board of health that the bureau of vital statistics of the board has been admitted into the federal registration area for deaths, having successfully passed the test requiring 90 per cent. registration.

**Personal.**—David W. Walley, Major, M. C., U. S. Army, Richton, on duty with the Thirteenth Division, has been promoted to the rank of lieutenant-colonel, and has returned to the United States.——Dr. Robert N. S. Young, Brooklyn, has been appointed all-time health officer for Hattiesburg and Forrest County.——Dr. Walter W. Crawford, Lieut.-Col., M. C., U. S. Army, Hattiesburg, who has been on duty with the American Expeditionary Forces in France for several months, has returned home.

**New State Officers.**—The annual meeting of the Mississippi State Medical Association was held in Hattiesburg, May 13 and 14, under the presidency of Dr. Walter S. Leathers, dean of the department of medicine of the University of Mississippi. Jackson was selected as the place of meeting for 1920, and the following officers were elected: president, Dr. Felix J. Underwood, Aberdeen; secretary, Dr. Thomas M. Dye, Clarkesdale; treasurer, Dr. James M. Buchanan, Meridian, and members of the state board, Drs. Walter S. Leathers, University; Charles D. Mitchell, Jackson; Thomas F. Elkin, Tupelo; Benjamin L. Crawford, Tylertown, and Harry F. Garrison, Hattiesburg.

## MISSOURI

**Retroactive Bill Defeated.**—A bill was introduced into the Missouri legislature amending the medical practice act so as to require the state board of health to admit to its examinations graduates of a "legally chartered" instead of a "reputable" medical school. The bill was defeated.

**Health Conference.**—The Springfield chamber of commerce, cooperating with the Missouri Tuberculosis Association, will hold a health-education conference at Springfield, May 29 to June 1. The object of the campaign is to secure instruction in the principles of personal hygiene and household sanitation to all schoolchildren in the state, and in municipal and industrial hygiene and sanitation to students in higher institutions of learning; to ascertain through a scientifically conducted health survey of schools and schoolchildren, especially in rural districts, facts pertaining to the status of the health of schoolchildren and of sanitary conditions under which they live; to determine a feasible plan whereby the health and mental efficiency of schoolchildren may be promoted; and to promote through systematic physical training and playground activities the normal instinct to play, whereby the schoolchild may be assured a sound and enduring body to house a well-trained mind. These objects are to be secured by the detail of one of the five normal schools of the state of a qualified agent as instructor in rural school and household hygiene and sanitation, who will also give like services to students in teacher training course in high, village and rural schools; by the employment of a competent woman to direct state-wide work in the modern health crusade; by the detail, for state-wide service in the universities and colleges of the state, of a man specially qualified in the principles and practice of industrial and municipal hygiene and sanitation; by the employment of a highly trained and experienced director of health surveys, of a state director of school nursing, and of state and district directors of physical training and playground activities.

## NEW JERSEY

**Eugenic Law Passed.**—Under a bill passed by the legislature of New Jersey, a physician's certificate of health has been made a prerequisite to matrimony in the state. The purpose is to prevent any persons from marrying who are afflicted with contagious or social diseases. The bill also provides that a fee for a physician making the necessary examination shall not exceed $2.50, and that county physicians, if called on, shall make this examination without charge to indigent applicants.

**Reconstruction of the Industrially Disabled.**—A commission has recently been created by act of the New Jersey legislature which has for its purpose the application to the cripples of civil life of those principles for the reconstruction of the disabled in civil and industrial life that have been worked out so successfully under military organization. Governor Edge and the members recently visited United States General Hospital No. 3, Colonia, N. J., to study the work being done there under Major Fred H. Albee, chief of the surgical division of that hospital. Governor Edge has appointed Major Albee chairman of the rehabilitation commission.

## NEW YORK

### New York City

**Opposition to Health Insurance.**—At a meeting of the Harlem chamber of commerce and the physicians' league, held on May 8, resolutions were passed endorsing the action of the Medical Society of the State of New York in instructing its delegates to oppose compulsory health insurance at the approaching annual session of the American Medical Association.

**Hotel Opens Hospital.**—The management of the new Hotel Pennsylvania has opened a hospital fully equipped, with operating room and roentgen-ray apparatus for the use of its more than 2,000 employees. The hotel has conducted a clinic for several months and has treated an average of sixty patients daily. The hospital will be in charge of Dr. Joseph Darwin Nagel, assisted by a staff of visiting physicians and surgeons and a corps of trained nurses. A visiting nurse will also be employed to look after the home conditions of patients.

**Personal.**—Dr. St. Clair Smith is to be the guest of honor at a dinner to be given at the Hotel Astor in celebration of his fifty years in the practice of medicine in this city.——Dr. Francis M. McMahon, attached to the staff of the Knickerbocker Hospital, was thrown to the pavement recently and sustained severe contusions and internal injuries, when the ambulance in which he was responding to a sick call collided with an automobile truck.——Royale H. Fowler, Brooklyn, Major, M. C., U. S. Army, who recently returned after service with Base Hospital No. 6, at Beaune, France, has been assigned to duty with General Hospital No. 21, Fox Hills, N. Y.

**Charities Conference.**—The tenth annual meeting of the New York City Conference of Charities was held, May 13, 14 and 15, under the presidency of Dr. Franklin Chase Hoyt. The questions discussed related to public health, war labor problems and public charities. Health Commissioner Copeland spoke of public health problems; Justice Cornelius F. Collins discussed the problem "After the Saloon, What?"; Dr. Pearce Bailey spoke on "The Problem of the Feebleminded in New York." Justice Collins expressed the opinion that an increase in indulgence in habit-forming drugs is almost certain to follow after prohibition and that legislation should be such as to permit medical judgment to prescribe alcohol. Dr. Walter H. Conley spoke on "The Unification and Control of Public Hospitals." He believes that an ideal control of public hospitals could be obtained by establishing a department of hospitals under the jurisdiction and direction of a commissioner, instead of the present system, which leaves the hospitals under three distinct departments

of the state government. Charles H. Johnson, secretary of the state board of charities, spoke on "Cooperation and Relation of Public and Private Agencies."

## PENNSYLVANIA

### Philadelphia

**Personal.**—Samuel Calvin Smith, Major, M. C., U. S. Army, formerly an instructor in the Jefferson Medical College, arrived from France, May 3. While overseas, he was stationed at a group of evacuation hospitals in the advance area of Bazoilles-Sur-Mese, later was transferred to Marseilles, where he was appointed chief of the medical service. ——Dr. Florence Chapman Child has returned from France, where she spent eighteen months with the division of child hygiene of the American Red Cross.——Drs. Alice Weld Tallant and Maude Kelly, formerly of the staff of the Women's Medical College, have been awarded the croix de guerre and Service de Sante decorations. They are the only American women given the ranks of major in the French army. Dr. Tallant went overseas as a director of the Smith College relief unit.

**Postgraduate Course in Social Service Work.**—With the cooperation of the Visiting Nurses' Society, the Pennsylvania School for Social Service opened a postgraduate course in public health nursing. The four month course for those wanting immediate preparation will be followed by a nine month course beginning September 16. The shorter course is designed to give practical training, experience in the fundamentals of public health nursing with special emphasis on the social and educational aspects. Two months are spent with the Visiting Nurses' Society under careful supervision work, including general visiting, prenatal and postnatal care of babies. One month will be spent by each student in special work under the direction of a district secretary of the Philadelphia Society for Organizing Charity. There will be a period spent in infant welfare work, including practice in health centers, follow-up work in homes, and study of the tuberculous in the tuberculosis clinics.

## CANADA

**Laval University Granted Separation.**—Laval University, Montreal, has been granted, by special decree of the Pope, separation from Laval University, Quebec City. Hereafter it will be known as the University of Montreal.

**Personal.**—Dr. Arthur Vallée, Quebec City, has been appointed a consultant by the University of Toronto, to the board of the Connaught Antitoxin Laboratory, succeeding the late Dr. Emmanuel P. Lachapelle, Montreal.

**Oxford Medical Association.**—The Oxford County (Ont.) Medical Association has elected the following officers: president, Dr. Jethro W. Counter, Ingersoll; vice president, Dr. Weston Krupp, Woodstock, and secretary-treasurer, Dr. George M. Brodie, Woodstock.

**Gift to University of Toronto.**—The department of medicine of the University of Toronto is to be the recipient of a gift of $25,000 a year for a period of twenty-five years from Sir John and Lady Eaton. This is to provide for a full-time clinician in the department of medicine and a half-time clinician in pediatrics.

**Hospital at Alberta.**—Arrangements have been completed for the building of a tuberculosis sanatorium at Bowness Park, Calgary, Alta. The building is to be a joint federal and provincial one, with 100 beds for soldiers and seventy-five beds for civilians. The total cost is $524,079, of which the province pays $217,000. After five years the hospital becomes the property of the province.

**Queen's Endowment.**—The $1,000,000 endowment fund for Queen's University now lacks only $12,000 of being completed. The late Chancellor Douglas, New York, willed $500,000 to the university on condition a like sum was raised from other sources. Some months ago the Carnegie Foundation offered $250,000 on the understanding that the remaining $750,000 be secured by May 15, but the Foundation has had the time limit extended to end of May.

**Postgraduate Courses for Medical Officers.**—The medical faculties of McGill and Toronto universities, according to report, have resolved to give summer postgraduate courses, especially adapted to meet the needs of returning medical officers. These courses are planned to begin about the middle of June and to extend over a period of three months. Only a nominal fee, to cover the cost of material, will be charged and the services of the teachers will be gratuitous.

## LATIN AMERICA

**Hookworm Disease in Cuba.**—According to a report recently published by Dr. J. F. De Pazos of Havana, there is urgent need of a campaign against hookworm disease in that island, as previous foci have increased and new ones have appeared. Laboratory examinations made in previous years show that the disease prevails in various parts of the island, and especially in three towns, namely, Viñales, Los Palacios and Cabaiguán. According to him, malaria is again becoming a serious problem on the island, especially in the western part, and the statistics relative to typhoid show a greater degree of infection than that existing in Europe and the United States. A league against malaria, hookworm disease and rural typhoid was organized in Cuba in 1917.

**Sanitation Work in Uruguay.**—The Uruguayan government has been authorized to execute sanitation work, consisting of water and sewerage services or water only, in fifteen cities. The work will be contracted for by cities or groups of cities by public bidding to which national and foreign concerns will be admitted. The work will be paid for by an issue of sanitation bonds bearing 6 per cent. interest and 1 per cent. annual accumulative amortization. The use of drinking water at the rate of 100 liters (26.4 gallons) per day will be compulsory for every house and lot, whether inhabited or not, where canalization passes. The rate for supplying drinking water to the public shall not exceed 15.51 cents per 1,000 liters. It is estimated that the total cost for these fifteen cities will be $12,000,000. In addition to this sum, $4,000,000 will be spent for sewer construction in four districts of Montevideo.

**Influenza in Brazil.**—As elsewhere, the pandemic of influenza, when it reached Brazil, found the public health authorities entirely unprepared to cope with it. The blame for having permitted the entrance of the disease was placed on Dr. Carlos Seidl, who had been the director of public health from Jan. 15, 1912, until Oct. 17, 1918, when his resignation was requested by the secretary of the interior, because of the criticisms made of Dr. Seidl's apparent inability to prevent first the introduction of the disease and later its spread. In the *Revista Medico-Cirurgica do Brazil* for October, November and December, Dr. Seidl defends his administration of public health affairs and shows that he did all he could with the limited resources at his disposal. In the December number, he reviews his whole term of office and describes the work accomplished by him when he took the position left vacant by Dr. Oswaldo Cruz, the leader in the campaign against yellow fever in Brazil. In concluding, Dr. Seidl quotes the following words, which explain the difficulties he encountered and state the reason he failed to accomplish more:

> It has been shown that sanitary conditions in Brazil depend exclusively on the appropriation of the necessary funds by the government. All the endemic and epidemic diseases are known, and if funds are available there is no doubt as to the success of a prophylactic campaign against them.

## GENERAL

**Applicants for National Board Certificate.**—Sixty-five applicants have been duly qualified to take the National Board examination to be held, June 2-7, 1919, at Philadelphia.

**Library Association to Meet.**—The twenty-first annual meeting of the American Medical Library Association will be held at Atlantic City, June 9, at 3 p. m., under the presidency of Dr. William Browning, Brooklyn.

**Physician's Prescription Required for Venereal Disease Remedies.**—According to the *Social Hygiene Monthly*, more than 23,000 druggists of this country have pledged themselves not to sell remedies for venereal diseases over the counter without a physician's prescription.

**Antivenereal Disease Campaign in Cuba.**—On request of the commander in chief of the Atlantic fleet, a field representative of the social hygiene division of the commission accompanied the fleet to Guantanamo Bay, Cuba, to introduce the program of educational work on venereal diseases.

**Hygiene Monthly Discontinued.**—With the April, 1919, issue, the *Social Hygiene Monthly* came to an end. Information on the progress of the campaign will be continued especially in the publications of the American Social Hygiene Association and through *Public Health Reports*, the official organ of the U. S. Public Health Service.

**Chemical Industries Exposition.**—The annual exposition of chemical industries has been changed from its usual place of meeting, New York City, and will be held this year at Chicago in the Coliseum and First Regiment Armory, during

the week of September 22. The exposition will be a demonstration in itself of the ability of the United States to maintain chemical independence. Besides the exhibits, the Chicago section of the American Chemical Society is planning a scientific program for the visiting chemists.

**National Examining Board Visits Europe.**—A committee of the National Board of Medical Examiners, appointed by the chairman, Surg.-Gen. W. C. Braisted, U. S. Navy, consisting of Louis A. La Garde and Victor C. Vaughan, Colonels, M. C., U. S. Army, and Dr. Walter L. Bierring, Des Moines, Iowa, will sail for Europe immediately after the meeting of the American Medical Association at Atlantic City, N. J., to confer with the conjoint board of England, Ecole de Médecine, and Examining Board of France, for the purpose of gaining international recognition for American medicine, on the basis of the certificate of the national board. The committee will remain abroad two months.

**Edith Cavell Hospital.**—Col. Antoine Depage, professor of surgery at the University of Brussels, and head of the Belgian Red Cross, has arrived in this country and will attend the meeting of the A. M. A. His object is to thank people who contributed to the Belgian relief fund in response to appeals made by his wife, who lost her life on the Lusitania while returning from this mission. Colonel Depage has also announced his plans for building a memorial hospital at Brussels to bear the name of Edith Cavell, who for eight years prior to the outbreak of the war was matron of Colonel Depage's private clinic in Brussels, and of his wife Marie. Lloyd George has already started a fund in England which will defray half the expense of this institution. Colonel Depage hopes to raise the remander in the United States.

**Victory Number of Michigan State Journal.**—The May issue of the *Journal of the Michigan State Medical Society* is a "Victory" number. It contains 314 pages and is bound in a very well designed and well executed cover printed in colors. The contents consists of the call and program for the annual meeting of the state society, together with other information regarding the place of meeting, etc., which is likely to prove of interest to the membership, and a complete "Roll of Honor" of those members who were in the government services during the war. Photographs of several hundreds of these doctors are published, together with photographs of the society's officers, groups of nurses who have been in service, various hospitals of the state and other matter bearing on the war activities of Michigan.

**Red Cross Recreation Program.**—The Red Cross is devising an organized recreational program for the men in the government hospitals throughout the United States. As the government has provided the best surgical skill and medical care for the physical welfare of the soldier and sailor, so the Red Cross is offering to him the most intelligent guidance for his leisure. Dr. Albert K. Fretwell, head of the Department of Recreational Leadership of Teachers' College, Columbia University, has made a tour of the reconstruction hospitals, traveling under the joint direction of the Surgeon-General's Office and the bureau of camp service, department of military relief of the Red Cross. The Red Cross has arranged for every variety of sport in which the convalescent men can participate and acts in cooperation with the department of physiotherapy in order that each man, according to his therapeutic needs, may be given the opportunity for the best physical training.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

United Charities of Chicago, $10,000; Chicago Orphan Asylum, $8,000; Women's, Wesley, and Presbyterian hospitals each $5,000, by the will of Henry Botsford, Chicago.

Lynn, Mass., Hospital, $10,000 by the will of Walter H. Breed, Lynn.

Natchez, Miss., Hospital, a donation of $15,000 by Mrs. J. M. Carpenter, Natchez.

Presbyterian Hospital, Philadelphia, for the maintenance of a free bed, American Oncologic Hospital, Philadelphia, for the study and treatment of cancer, and Philadelphia Home for Incurables, each $5,000, and Rush Hospital for Consumptives and Free Hospital for Consumptives, Philadelphia, $2,500, by the will of Mary E. Stewart, Philadelphia, Philadelphia.

College of Physicians of Philadelphia, a portrait of Michael Leib, one of the founders; Children's Hospital of Philadelphia, $4,000; Philadelphia Home for Incurables and Maternity Hospital, each $5,000; and contributors of Pennsylvania Hospital, $10,000, by the will of Thomas Shelton Harrison.

**A New Medical Publication.**—The first issue of *Modern Medicine*, a publication to be devoted to "the application of medicine and allied sciences to industrial efficiency and national health," has just appeared. It includes the *Interstate Medical Journal*. It is under the editorship of Drs. Alexander Lambert and S. S. Goldwater and under the managing editorship of Mr. John A. Lapp, who was formerly executive secretary of the health insurance commission of Ohio. The magazine aims to be a clearing house for progress in social medicine. It is well departmentized. Editorials appear under "Notes and Comments"; some excellent original articles under the heading "General Articles;" original papers on industrial medicine under "Medicine and Industry;" and under "The Nation's Health" appear such articles as "Good Roads and Health," "The New Public Health," "Schools Want Uniform Health Courses," "Capitalizing Health Knowledge." The other departments are: "Current Problems and Social Medicine," "The Month in Medicine," abstracts and book reviews. News items appear in the form of fillers. This magazine is well and artistically printed, following in its general plan *Modern Hospital*, issued by the same publisher. If succeeding numbers measure up to the initial one, this journal should be a valuable addition to American medicine.

**Sir Arthur Newsholme Becomes Professor of Hygiene in Johns Hopkins School of Public Health.**—Sir Arthur Newsholme, K.C.B., who has come to the United States following the closing of the international Red Cross conference at Cannes, France, in which he took a prominent part, has accepted the chair of hygiene in the new School of Public Health of the Johns Hopkins Medical School. The appointment, we understand, is tentatively for the coming year only. Since early in May Sir Arthur Newsholme had been taking part in child welfare conferences as the guest of the Children's Bureau of the Department of Labor. Sir Arthur was, until late in 1918, chairman of the Local Government Board of Great Britain, being succeeded temporarily by Mr. Hayes Fisher and more recently by Sir Auckland Geddes. Dr. Newsholme received the degree of M.D. from the University School of Medicine in 1880, the certificate in public health in 1885, and the F.R.C.P., London, in 1898. For many years he has been associate editor of the *Journal of Hygiene*, an examiner in state medicine in the University of London and an examiner in preventive medicine in the University of Oxford. He delivered the Milroy lecture of the Royal College of Physicians in 1895, his subject being "Natural History and Affinities of Rheumatic Fever." Some of his more important recent publications have concerned "Influenza from the Public Health Standpoint," "Child Mortality," "Tuberculosis and War Conditions," "The Use of Colonies in the Treatment of the Tuberculous" and many other subjects of interest to preventive medicine.

## FOREIGN

**Influenza in India.**—Dispatches from London state that almost 5,000,000 persons have died in British India from influenza, and that fully 1,000,000 persons are believed to have died in the native states from the same cause. The deaths from influenza are estimated at 20.6 per thousand.

**Warned Against Typhus Spreaders.**—All over Germany notices are being posted warning the population against lice as bearers of typhus and other diseases. The increase in typhus fever is said to be due to the failure of the authorities to delouse the German soldiers returning from Russia.

**Vaccination in Spain.**—The success obtained with the vaccination measures enforced in the province of Madrid has induced the government to order the governors of all the provinces to institute immediately a vaccination campaign similar to the one conducted in Madrid, which was reported at length in THE JOURNAL for April 12, p. 1091.

**Influenza in Spain.**—In view of the reappearance of influenza, this being the third wave of the disease, the government has ordered the provincial inspectors to keep track of the disease and to report immediately those communities where the local physicians cannot cope with existing conditions, so that physicians may be ordered for service there from other places.

**American Students at the University of Bordeaux.**—The *Journal de Médecine de Bordeaux* relates that there are sixty medical students among the 300 American soldier-students now enrolled at the University of Bordeaux. Professor Armstrong is in charge of the American contingent—*nos jeunes amis au costume kaki*, as the journal calls them—and the American contingent already has its special weekly. Its title is *Voilà*, while the 1,200 American students enrolled at Toulouse have a weekly entitled *Qu'est-ce que c'est?* Our exchange relates that the students at Bordeaux represent

forty-four states, besides one each from Nicaragua and Canada. Harvard leads in the number of its alumni, with 14; Chicago next with 9, Yale with 7.

**Belgian Physicians Who Have Died During the War.**—The *Paris Médical* gives a list of the members of the profession in Belgium that have not survived the war. Among them are Drs. Dubois-Havenith, father and son; Dr. Camus, burgomaster of Andenne, shot by the Germans; Prof. Van Gehuchten and Prof. de Winiwarter, both of international fame; Dr. Masoin, secretary of the Belgian Académie de médecine; Drs. Heynen, Boulengier and Van Dam, former presidents of the Fédération médicale; Dr. Rommelaere, professor emeritus of the University of Brussels; the surgeon, Van Engelen; Dr. G. Corin, professor of legal medicine at Liége, and nineteen other physicians. Dr. Dubois-Havenith presided at the International Preventive Congress held at Brussels some years ago.

**Deaths in the Profession Abroad.**—Dr. **R. Fusari,** professor of anatomy at the University of Turin and formerly incumbent of the chair of histology at Messina, aged 62. His works on histologic and embryologic topics won several prizes offered by scientific societies at home and abroad, and his set of anatomic models are said to be superior to anything in that line in other countries.——Dr. **C. Flensburg,** president at one time of the Swedish Medical Association, a leading internist of Stockholm, aged 63. His work, "Why Malaria Has Disappeared from Sweden" attracted much attention, as also his historical study of the sanitary statistics of the Stockholm garrison. He has also published numerous communications on pediatrics and internal medicine in general. ——The *Nederlandsch Tijdschrift* mentions the death of Prof. **H. Aronson** of Berlin, pediatrist and serologist, aged 53.

## LONDON LETTER

LONDON, April 30, 1919.

### Euthanasia

The question as to whether physicians should have the power to terminate painlessly lives which have become a burden from incurable disease has been debated from time to time. It has arisen once more. An inquest was held in London on a man who stabbed himself in the heart. He had said that it was a pity physicians could not put patients like himself suffering from an incurable disease out of their misery. The coroner, Mr. Ingleby Oddie, remarked that we had not yet come to the stage of civilization which allowed this course, but he had no doubt that the time would come when painless euthanasia would be permitted in such cases. A verdict of "suicide while of unsound mind" was returned. Some days later an inquest was held on a man who suffered from consumption and shot himself through the heart. He had been very depressed because he was incurable and had read and called attention to an article in the daily *Mail* on the previous inquest, which was entitled, "Doctors' Right to Kill." A discussion of the question followed in the press.

The medical profession showed itself almost unanimous in opposing the coroner's suggestion. A well-known physician and member of Parliament, Lieutenant-Colonel Raw, said that no physician would accept such a responsibility, for medical science was not an exact science. New discoveries were constantly being made, and a patient that was regarded as incurable today might be cured tomorrow. It was a physician's whole business to prolong life to the last, and to save the sufferer, as far as possible, from physical and mental pain. Once an alteration was made in that conception of a physician's duty, the whole public confidence in the medical profession would go. Again, to illustrate the impossibility of the proposal, suppose it was admitted that incurables might be killed, when would they be killed? A man with a disease might be as incurable in the early stages as he was in the later. He might be able to live for several years. Was he to be killed at first, or in the terminal stages of the disease? Lieutenant-Colonel Raw said that he had known many a case of men who were condemned to death by leading specialists and who had completely recovered. He considered that the proposal was utterly impossible. Capt. W. E. Elliot, another physician and member of Parliament, was equally emphatic. He instanced the cases of men suffering from incurable diseases who had produced discoveries or done work of immense value to the human race in the last few weeks of their lives. Were such men to be exterminated? Might not the physician, in condemning a man to the lethal chamber, be robbing humanity of the possibility of a great product of such a man's brains? Moreover, once the right to death of incurables, with their own consent, had been admitted, the next step would be an admission of the right of other people to decide for them. Then the physician would become at once a suspect, and would lose the confidence of every one of his patients.

### Septicemia an "Accident"

As has been often illustrated in previous letters to THE JOURNAL, the Workmen's Compensation Act is so widely drawn up that almost anything which can happen to a workman is held by the courts to be an accident. The following important case has recently been decided in the House of Lords, the highest court in this country. The widow of a workman appealed from a decision of a lower court on the following circumstances. He was employed in the handling and bagging of artificial manures, which were composed largely, or wholly, of bone dust. Jan. 31, 1916, while at work, he became ill with blood poisoning, from which he died, February 16. This illness was due to infection by streptococci and staphylococci. The point of infection was a scratch or abrasion on the skin of the left leg. It was not proved when or how he received this. It was impossible to say with certainty when the infection occurred, though it was probably some days before he became ill. The streptococci and staphylococci were present in large numbers in the bone dust which he had to handle, but they were also to be found in decaying matter, in dust, and in the air, although in a much lesser degree. They might be found on the skin and clothes of persons of uncleanly habits. The arbitrator was satisfied, as the result of the medical evidence, that the infection which caused the illness and death of the workman was derived from the poisonous germs contained in the bone dust which he handled in the course of his employment, and he so found in fact. The case then came before a court, which decided that there was no evidence on which the arbitrator was entitled to find that death was caused by "an injury by accident arising out of and in the course of the workman's employment" within the meaning of the act.

In the House of Lords the Lord Chancellor gave the following judgment, with which three out of four other judges who formed the court agreed. In his opinion the judgment of the lower court could not be supported. The matter was concluded by authority. In a previous case that house had decided (in 1905) that the assault of a bacillus on a workman proceeding from the wool on which he was working, and affecting him with mortal anthrax, was an accident, and that the consequent and fatal disease was an injury. In that case, therefore, the essentials of the composite phrase "injury by accident" were satisfied. That decision might easily prove, with the development of scientific discovery, to be one of far-reaching importance. When the previous case was decided the area conceded by contemporary science to idiopathic disease was much larger than at present, and the area of disease traced to infection by bacilli had correspondingly grown.

### Influenza in India

The preliminary report of the sanitary commissioner to the government of India on the influenza epidemic of last autumn has just been published. The epidemic assumed the proportions of a national calamity; no country suffered so severely as did India. In British India, influenza was responsible for a death roll of approximately 5,000,000, and it is unlikely that less than 1,000,000 deaths occurred in the native states. The central, northern, and western portions of India were the worst sufferers. The hospitals in the Punjab were choked so that it was impossible to remove the dead quickly enough to make room for the dying. The streets and lanes of the cities were littered with dead and dying people. The postal and telegraph services were completely disorganized; the train service continued, but at all principal stations dead and dying people were being removed from the trains. The burning ghats and burial grounds were literally swamped with corpses, while an even greater number awaited removal. The depleted medical service, itself sorely stricken by the epidemic, was incapable of dealing with more than a minute fraction of the sickness requiring attention. Nearly every household was lamenting a death, and everywhere terror and confusion reigned. No part of the Punjab escaped. The total estimated influenza mortality during October and November amounted to 816,317, which is 4.2 per cent. of the Provincial population. The poor and rural classes suffered most. The Provincial Sanitary Commissioner attributed this to the fact that such classes were adversely affected by economic conditions resulting from the war and failure of the rains. Food prices were high, milk was scarce, and blankets and warm clothing very difficult to obtain. How-

ever, the incidence of the disease was very high among the well-fed British troops in India, greater in fact, among them than among the Indian troops.

### Salaried Hospital Staffs

There is reason to believe that the new departure (The Journal, April 12, p. 1091) initiated at the London Hospital —the appointment of whole-time salaried physicians and surgeons, instead of honorary consultants—is likely to be adopted by several of the other great medical schools in London. St. Bartholomew's and Guy's are considering schemes in relation to preventive medicine. The new movement is a great revolution in the medicine of this country. Departments will be set aside for the intensive study of particular diseases, and this study will absorb the whole energies of research workers.

## PARIS LETTER

Paris, May 1, 1919.

### Health of Schoolchildren in Occupied Territory

At a recent meeting of the Société de pédiatrie, Drs. Génévrier and Heuyer directed attention to the impaired health of the children living in the territory which was invaded by the enemy troops. In the Ardennes especially, the food of the children was woefully deficient, being far from sufficient for their needs. Nurslings had been deprived of milk and flour of good quality, and were forced to eat panada (bread or crackers covered with boiling water) prepared with war bread. Children from 7 to 10 years of age received a very deficient albumin and fat ration. Furthermore, the lodgings were all more or less contaminated by the German troops, and the inhabitants of all ages still continue to sleep on straw infected by vermin. Infestation with lice is very prevalent and from 50 to 60 per cent. of the children are suffering from itch. Children aged from 11 to 12 years have been compelled to do forced labor, which, while not always overtaxing, has, nevertheless, subjected them to the inclemency of the weather, from which they have suffered. Besides these bad physical conditions, other factors affecting their intellectual and moral life have entered in and help to account for the retarded development of these children. They have been set back about eighteen months in development. At school, in the primary grades, cases of anemia and rickets are very numerous. The children of the more advanced grades are all affected by pathologic conditions more or less grave which have been badly taken care of, and many of them present adenopathies. Génévrier and Heuyer urged the immediate institution of corrective measures, and pointed out that the medical services of the various health organizations are far from being in position to cope with conditions. School inspection is needed; school canteens and shower baths should be provided.

### Division of Spinal Cord by a Hidden Bullet

Drs. Georges Guillain and J.-A. Barré recently reported to the Société de neurologie an unusual case in which the spinal cord was involved, but for which no cause was discovered in spite of repeated examinations made. A young soldier quartered in rest billets far from the firing line, was seated talking to his comrades. Suddenly he felt a severe pain in the back in the dorsal region and on attempting to get up was unable to arise. He was taken to an evacuation hospital, and from there he was referred to a neurologic service with a diagnosis of transverse myelitis. Reexamination confirmed the presence of a complete paralysis with anesthesia, abolition of tendon reflexes, plantar, cutaneous and flexion reflexes, and sphincter disturbances. Yet there was no apparent injury in the dorsal region nor any painful pressure point along the spinal column. Roentgen-ray examination, however, disclosed a bullet imbedded, point first, in the body of the seventh dorsal vertebra for a distance of 5 cm., one half the depth of the vertebral body. In spite of operative intervention, the man died a few days afterward. The necropsy revealed a division of the spinal cord at the level of the sixth and seventh dorsal vertebrae. Only a slender piece of the left posterior column of the cord maintained its continuity.

This is the only case seen by the reporters in which a wound of the spinal cord by a bullet was not recognized as such. The wound was sustained far from the firing line; there was no external hemorrhage; it was unrecognized by the regimental surgeon, the ambulance surgeons and the neurologists. The point of entrance was almost invisible. The roentgen-ray examination was the only thing that cleared up the situation and explained the nature of the paralysis. It was not ascertainable from what position the bullet had been fired. The bullet had made a physiologic section of the cord, giving rise to symptoms of a complete recent anatomic section. The tendon reflexes were abolished and the cutaneous plantar reflex determined the free flexion of the toes to the right or to the left.

### Compulsory Notification of Tuberculosis

The Société médicale des hôpitaux de Lyon, having discussed this question fully, is of the opinion that open cases of tuberculosis should be recorded, in conformity with the bill of Jan. 16, 1919, provided proper measures for the treatment and prophylaxis of tuberculosis be instituted to take care of the large number of patients resulting from such a procedure, and the decree requiring the isolation of tuberculosis patients in hospitals shall be enforced at once. In the absence of such provisions, the society believes that the law will prove ineffective and therefore must withhold its approval.

### Tuberculosis and Venereal Disease Prophylaxis

The minister of marine has appointed a commission which will study the question of tuberculosis prophylaxis in the navy and will suggest measures to prevent and combat the development of this disease. Another commission will take up the prophylaxis of venereal diseases in the navy.

### International Red Cross Conference

This conference has been held, and a committee charged with this work has published reports of the work done by the sections on tuberculosis, malaria and venereal diseases. The first of these reports contains the conclusions reached by those interested in the campaign against tuberculosis. The following points are considered to be fundamental: (1) dispensaries proportionate to the needs and provided with laboratories and professional visiting nurses who will care for the patients; (2) systematic inspection of schools; (3) hospital care for advanced cases; (4) accommodations in sanatoriums; (5) popular educational propaganda concerning tuberculosis.

The section on malaria has suggested the establishment of an international bureau which, through the assistance of the various Red Cross societies, will effect cooperation with the national agencies charged with the control of malaria. It would be the duty of the bureau to keep abreast of the progress of studies in various countries and associate itself with all existing organizations for the purpose of controlling this disease. It is recommended that a study be made of the geographic distribution of malaria, with the demonstration of means of control, in which connection cooperation with government services is indispensable, for it is really a governmental function.

The section on venereal diseases recommends the organization of entertainments, social and athletic programs, early marriage, isolation of infected persons, systematic preventive treatment, suppression of prostitution, establishment of laboratories, clinics, free consultations, etc.

## *Marriages*

George Adolphus Harris, Jr., Lieut., M. C., U. S. Army, Pittsburgh, on duty in the office of the chief surgeon, Base Section No. 3, S. O. S., London, England, to Miss Sibyl Maude Burton of Walton-on-the-Hill, Stafford, England, February 17.

George Louis Vogel, Capt., M. C., U. S. Army, Boston, on duty at Camp Sherman, Chillicothe, Ohio, to Miss Mary Jane Samuel of Wellston, Ohio, May 2.

Bynum McWhorter Works, Brownsville, Texas, to Miss Anna Lee Konyak of Alta Loma, Texas, at Philadelphia, May 1.

Wyman George Hough, Sibley, Iowa, to Miss Agnes Mai Marty of Monroe, Wis., at Bismarck, N. D., March 12.

Edson Erwin Blackman, Charlotte, N. C., to Miss Gertrude McWilliams of Raleigh, N. C., April 23.

Elsie Rau Treichler, Germantown, Philadelphia, to Mr. Hiram Ready of Philadelphia, May 1.

William Hamilton Dulaney to Mrs. Emma N. Wells, both of Lynchburg, Va., April 30.

Clarence E. Neipling, to Miss Mable E. Bright, both of Philadelphia, April 30.

# Deaths

**Frederick Russell Sturgis,** Boston; Harvard Medical School, 1867; aged 74; lecturer on venereal diseases from 1874 to 1880, and professor of diseases of the genito-urinary organs and venereal diseases from 1880 to 1882 in the New York University; president of the Medical Society of the County of New York in 1881; visiting physician to the Charity Hospital from 1873 to 1893; a fellow of the New York Academy of Medicine; author of several works and monographs on his specialty; died at his home, May 6.

**Angelo Festorazzi,** Mobile, Ala.; University of Alabama, Mobile, 1887; aged 54; a member of the Medical Association of the State of Alabama and Association of Military Surgeons of the United States; formerly first lieutenant and assistant surgeon, Alabama State National Guard, and assigned to the First Infantry; a specialist in dermatology; died at his home in January from chronic nephritis.

**Frederick Allen Williams** ✠ New York City; Albany (N. Y.) Medical College, 1892; aged 48; medical adviser of the insurance fund of the state industrial commission; for two years a member of the staff of the Hudson River State Hospital, Poughkeepsie; who was injured by the overturning of his automobile near Absecon, N. J., April 26; died in Atlantic City, N. J., May 1, from his injuries.

**William A. Hocker,** Kemmerer, Wyo.; Bellevue Hospital Medical College, 1868; aged 72; local surgeon for the Oregon Short Line, and health officer of Lincoln County, Wyo.; who had served in both houses of the Wyoming legislature, and was for three years superintendent of the Wyoming State Hospital, Evanston; died in Omaha, April 30, from chronic nephritis.

**William A. Morrison,** Struthers, Ohio; Western Reserve University, Cleveland, 1881; aged 63; vice president of the Struthers Savings and Banking Company, a member of the first village council, and postmaster for twelve years; died at the home of his daughter in Struthers, May 6, from pneumonia.

**Frederick Weisbrod** ✠ Brooklyn; New York University, New York City, 1890; aged 55; a specialist on gynecology; attending gynecologist to the Wyckoff Avenue, Heights and German hospitals, Brooklyn, and consulting gynecologist to the new Utrecht Hospital; died in Philadelphia, May 9.

**Nathaniel Harris Kirby,** Burdett, N. Y.; New York University, New York City, 1884; a member of the Medical Society of the State of New York; lecturer on dermatology in Denver Medical College from 1889 to 1891; died at his home, March 2, from acute dilatation of the heart.

**George M. Getze,** Tarentum, Pa.; Hahnemann Medical College, Philadelphia, 1877; aged 64; one of the founders and president of the Allegheny Valley Hospital, Tarentum, and former president of the Tarentum board of education; died in a sanatorium at Clifton Springs, N. Y., May 3.

**George S. Burruss,** Augusta, Ga.; Meharry Medical College, Nashville, Tenn., 1891; aged 53; also a druggist and proprietor of the Burruss Sanatorium, Augusta; died at his home, April 25, from septicemia, due to a wound accidentally received while performing a surgical operation.

**Wilford W. White** ✠ Ravenna, Ohio; Western Reserve University, Cleveland, 1881; aged 60; founder and surgeon to the White Hospital, Ravenna, and local surgeon of the Pennsylvania, Baltimore and Ohio and Erie systems; died at his home, May 8, from chronic nephritis.

**Joseph Augustus Treat,** Orion, Mich.; University of Michigan, Ann Arbor, 1867; aged 77; also a graduate in pharmacy; at one time postmaster of Orion; said to have been the first patentee of a cash register; died at his home, April 28.

**Henry Clay Wilber** ✠ Pine Plains, N. Y.; Bellevue Hospital Medical College, 1867; aged 73; president of the Dutchess County Medical Society from 1891 to 1893; health officer of Dutchess County since 1894; died in Brooklyn, May 6.

**William Beam,** Philadelphia; Jefferson Medical College, 1901; aged 54; for fifteen years chief chemist in the Wellcome Research Laboratory, Gordon Memorial College, Khartoum, Africa; died in Khartoum, April 15, from heart disease.

**Arthur Warren Tucker** ✠ Logansport, Ind.; Miami Medical College, Cincinnati, 1893; aged 48; for many years medical examiner for the relief department of the Pennsylvania system; died at his home, May 7, from leukemia.

**Will J. Prince,** Piqua, Ohio; Eclectic Medical Institute, Cincinnati, 1883; aged 58; once president of the Ohio State Medical Association; died in the Memorial Hospital, Piqua, March 29, after an operation for intestinal obstruction.

**John Henry Frederick Schroeder,** Minneapolis; University of Minnesota, Minneapolis, 1915; aged 32; assistant in medicine on the faculty of his alma mater; died in the Minneapolis City Hospital, May 2, from diphtheria.

**Everett Jones** ✠ Boston; Boston University School of Medicine, 1898; aged 50; a specialist on diseases of the ear, nose and throat; a practitioner of Brookline and Boston; died at his home in Brookline, April 25.

**Oscar Edward Hedrick** ✠ **Lieut., M. C., U. S. Army,** Museville, W. Va.; University College of Medicine, Richmond, Va., 1908; aged 33; died at his home, April 18, from pulmonary tuberculosis.

**Henry Carroll Holbrook** ✠ Penacook, N. H.; Dartmouth Medical School, Hanover, N. Y., 1885; aged 59; one of the most prominent practitioners of New Hampshire; died at his home, May 3.

**Bernard J. Byrne** ✠ Berkeley, Calif.; University of Pennsylvania, Philadelphia, 1871; aged 69; formerly surgeon of the Baltimore and Ohio Railroad at Ellicott City, Md.; died, recently.

**Frank Cole Roberts,** Fort Madison, Iowa; Louisville (Ky.) Medical College, 1876; aged 63; a member of the Iowa State Medical Association; died at his home, May 4, from nephritis.

**Joseph Henry Robinson,** Worcester, Mass.; New York University, New York City, 1864; assistant surgeon, U. S. Army, during the Civil War; died at his home, about April 18.

**Wilfred Rivers Clayton,** Columbia, S. C.; University of Maryland, Baltimore, 1912; aged 30; died in Hopkins, S. C., February 1, from bronchopneumonia following influenza.

**Josiah Sylvang Gardner,** Kansas City, Mo.; Hospital Medical College of Evansville, Ind., 1885; died in the Research Hospital, Kansas City, May 5, from heart disease.

**Frank Hubert Neuhaus** ✠ Houston, Texas; Bellevue Hospital Medical College, 1891; aged 50; a specialist on internal medicine; died in Hot Springs, Ark., May 1.

**Elmer E. Barr** ✠ Hyannis, Neb.; State University of Iowa, Iowa City, 1887; aged 55; died suddenly, May 3, while making a professional call in the country.

**Melvin Marcellus Lottridge,** Pratt, Kan.; Kansas City (Mo.) Medical College, 1893; aged 60; died at his home, April 26, from cerebral hemorrhage.

**William Roberts Williams,** Plaza, Wash.; Lincoln Memorial University, Knoxville, Tenn., 1893; aged 59; died at his home in Spokane, Wash., May 5.

**Rollin Victor Crittenden,** Fredonia, N. Y.; University of Buffalo, N. Y., 1895; health officer of Fredonia; died in a hospital in Buffalo, April 30.

**Ewald H. Frielingsdorf** ✠ St. Louis; Beaumont Hospital Medical College, St. Louis, 1889; aged 54; died in Josephine Hospital, St. Louis, May 11.

**Nelson C. Scudder,** Rome, N. Y.; Hahnemann Medical College, Philadelphia, 1879; aged 55; died, March 3, as the result of an automobile accident.

**Hiram Tenney Hardy** ✠ Kaneville, Ill.; Dartmouth Medical School, Hanover, N. H., 1867; aged 81; died at his home, May 7, from erysipelas.

**J. Rush Philson,** Racine, Ohio; Starling Medical College, Columbus, Ohio, 1877; aged 64; died at his home, April 27, from angina pectoris.

**Charles H. Winton,** Kalamazoo, Mich. (license, Michigan, 1903); aged 75; died in his office in Kalamazoo, March 4, from heart disease.

**Mary A. Sperry** ✠ San Francisco; Woman's Medical College of Pennsylvania, Philadelphia, 1890; aged 55; died at her home, May 7.

**David Wiley,** Salem, N. J.; University of Pennsylvania, Philadelphia, 1870; aged 71; died at his home, April 30, from heart disease.

**Robert Edward Miller** ✠ Chicago; Rush Medical College, 1880; aged 72; died at his home, May 2, from angina pectoris.

**Irving Clendenen,** Maywood, Ill.; Bennett Medical College, Chicago, 1876; aged 72; died at his home, May 6.

**Paul Revere Hunn,** Hartford, Conn. (license, Connecticut, 1893); aged 72; died at his home, about April 18.

✠ Indicates "Fellow" of the American Medical Association.

# The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

## SOME QUESTIONS ANSWERED

Each year the Propaganda department of The Journal receives and answers between four and five thousand letters of inquiry. A large proportion of these letters deal with subjects that have already been discussed in The Journal, and have been reprinted in pamphlet form for easy and inexpensive distribution. Because it does not seem good journalism to reprint, repeatedly, matters that have already been dealt with in The Journal practically all of these inquiries are answered by mail direct. This system, however, ignores the fact that The Journal has many thousands of new readers each year. It also fails to take into account the further fact that the original article on any subject is only read by a certain proportion of those who are The Journal's subscribers at the time it appears. It is desirable, then, occasionally to summarize some of the facts that have already been published regarding certain products or devices not so much for the purpose of restating the specific facts, as for reminding our readers of the large amount of information on the nostrum evil and quackery that is available in the various educational publications issued by the Propaganda department of The Journal. This is the excuse, if excuse be needed, for briefly reprinting a few of the many inquiries that have come in the recent mail:

**Kline's Nerve Remedy.**—Dr. L. G. Taylor of Hudson, N. Y., writes: "Will you kindly give me information about 'Dr. Kline's Epilepsy Remedy,' Redbank, N. J.?"

Answer: This nostrum was one of several "epilepsy cures" that, about four years ago, were analyzed by the A. M. A. Chemical Laboratory, investigated by the Propaganda department, and described in a series of articles that gave the essential facts regarding the group. The Kline nostrum, one of the usual bromid mixtures, was found to be practically identical with a similar product sold as "Waterman's Tonic Restorative." The matter has been reprinted in full in the pamphlet, "Epilepsy Cures."

**Case's Rheumatic Specific.**—A member of the editorial staff of one of the leading Boston papers writes, in part: "I am informed that The Journal has published an article about the rheumatism remedy sold by Jesse A. Case of Brockton. I should like to see the article."

Answer: Case's Rheumatic Specific was investigated by the Propaganda department and the product analyzed by the A. M. A. Chemical Laboratory in 1913, an article appearing in The Journal, Jan. 31, 1914. The nostrum was found to have essentially the following composition: Sodium salicylate, 22.4 per cent.; Magnesium oxid, 5.3 per cent.; Licorice root, 72.3 per cent. The article is reprinted in the pamphlet, "Miscellaneous Nostrums."

**Diabetol.**—An Iowa layman, who does not wish to have his name given, writes: "I have received circulars and letters from the Ames Chemical Co. of Binghamton, N. Y., regarding a preparation they call 'Diabetol,' which they claim is a cure for diabetes. If you have any information as to this claimed remedy, please advise me in confidence whether you consider there is any merit in it or not."

Answer: "Diabetol," which comes in the form of an herb, was investigated by the Propaganda department in 1910. The material was submitted to Professor Millspaugh, Curator of the Department of Botany of the Field Museum, Chicago, and the result of his investigations appeared in the article that was published in The Journal, July 9, 1910. The herb was found to be from a shrub—*Stenolobium stans* (L.)—that grows more or less plentifully from Arizona south through Mexico and Central America. The herb has more or less local reputation as a diuretic. A full report on "Diabetol" has been reprinted in the pamphlet "Nostrums for Kidney Diseases and Diabetes."

**Varnesis.**—Mrs. Williams (Pennsylvania) writes: "Can you tell me just how much of a fake 'Varnesis' is? I understand you publish such information. If it costs to get this, tell me how much and I will gladly forward the amount. This is supposed to be a rheumatic remedy."

Answer: A brief item on "Varnesis," reporting the findings of the state chemists of Connecticut, is published in the pamphlet "Miscellaneous Nostrums," a complimentary copy of which was sent to Mrs. Williams. At the time of the Connecticut report, Varnesis contained 18 per cent. alcohol, and less than 1 per cent. of vegetable extractives, chiefly derived from laxative drugs and capsicum. Later the alcohol percentage was reduced to 15. Even at that percentage, a person taking it according to the directions, would consume the alcohol equivalent of one-half pint of undiluted whisky every four and one-half days.

**Way Ear Drum and Wilson Ear Drum.**—Mrs. Neergaard (Michigan) writes: "Will you kindly give me what information you can about George P. Way, Detroit, also the Wilson Ear Drum Co. of Louisville, and their appliances?"

Answer: The George P. Way Ear Drum and the Wilson Ear Drum were both discussed in The Journal, Nov. 1, 1913, and the matter has been reprinted in full in the pamphlet, "Deafness Cures."

**Viavi.**—Dr. A. R. Rozar, Macon, Ga., writes: "Please give me what information you can on a 'patent medicine' treatment called 'Viavi.' I understand that it is dispensed by agents and not by druggists."

Answer: The "Viavi" scheme emanates from San Francisco, and was very fully dealt with some years ago by the *California State Journal of Medicine*. This article has been reprinted in full, with illustrations added, and appears now in the pamphlet, "Female Weakness Cures." There are various preparations sold under the generic name "Viavi." The "Viavi Capsules" were analyzed for the *California State Journal* and were reported to contain nothing but extract of hydrastis and cocoa butter.

**Fulton's Compounds.**—Dr. G. B. Taylor, Cameron, Texas, sends the Propaganda department an advertising circular dealing with these nostrums, and asks: "Give me some opinion of the enclosed circular regarding the medicinal properties of this medicine, used for albuminuria and glycosuria."

Answer: The Fulton nostrums were briefly referred to in The Journal as long ago as Jan. 18, 1913. Three years later (Jan. 29, 1916) The Journal published the results of a much more complete investigation of the products. The whole matter has been reprinted in the pamphlet, "Nostrums for Kidney Diseases and Diabetes," and there has been added thereto the government's charge of fraud against the products as reported in a government bulletin in March, 1917.

**Nuxated Iron.**—Dr. Ross Hopkins, Independence, Kan., writes: "Recently a patient came to me with a skin eruption, and about the only information I obtained was the fact that she had been taking some tablets of 'Nuxated Iron,' made by the Day Health Laboratories of Detroit, Mich. Can you refer me to any statement in The Journal as to the composition of this remedy?"

Answer: "Nuxated Iron" has been dealt with at various times in The Journal, and practically all of the matter has been reprinted in full in the pamphlet "Miscellaneous Nostrums." The analysis by the A. M. A. Chemical Laboratory indicated that each "Nuxated Iron" tablet contained only 1/25 grain of iron, while the amount of nux vomica was practically negligible. Nuxated Iron has been advertised by an extensive campaign of misrepresentation and exaggeration.

**Sanosin (Sartolin).**—Dr. G. T. Palmer, president of the Illinois Tuberculosis Association, writes: "I am in receipt of a letter from Mr. ——— of Florida, asking for information in regard to a proprietary preparation known as 'Sanosin,' advertised as 'A Highly Successful Home Treatment.' I am enclosing circular herewith. Will you kindly write Mr. ———, giving him such information as you have?"

ANSWER: Mr. ——— was written to and a complimentary copy of the pamphlet, "Consumption Cures" was sent to him. This contains a reprint of an article that appeared in THE JOURNAL, June 18, 1910, regarding "Sanosin," then being introduced in the American market under the name of "Sartolin." "Sanosin" consists of a mixture of powdered eucalyptus leaves, flowers of sulphur, powdered wood charcoal, and oil of eucalyptus. The instructions to the consumptive are that this mixture should be placed on a slab under which an alcohol lamp is burning. The whole thing is supposed to be operated in a room which is tightly closed, and in which the consumptive is supposed to stay. The "Sartolin" advertising matter, at the time THE JOURNAL investigated the nostrum, belittled the open air treatment of consumption.

**Town's Epilepsy Treatment.**—Dr. Parley Nelson, Rexburg, Idaho, writes: "I have a patient taking 'Town's Epilepsy Treatment,' made by the Town Remedy Co. of Milwaukee. If you have any literature on this fake, kindly send me some."

ANSWER: Dr. Nelson was sent a complimentary copy of the pamphlet, "Epilepsy Cures," which contains the results of the Propaganda department's investigation and the A. M. A. Chemical Laboratory's analysis of the Town remedy, another of the many bromid mixtures.

## *Correspondence*

### CIVILIAN MEDICAL ADMINISTRATION AND THE NEED OF TRAINED LEADERS

*To the Editor:*—The need of a better organization of medical activities is generally conceded. Opinions vary as to the best type of organization. A straightforward system of state medicine seems to many to promise the greatest good. Others, who fear the benumbing effects of a law-bound, bureaucratic state service, suggest as a substitute a state-supervised scheme of sickness insurance, with medical relief for the insured. The strongest of all arguments for compulsory health insurance is, to my mind, that it would open the door to effective medical organization. Compulsory health insurance would not *necessarily* result in effective medical administration, because trained leadership is lacking. It is my belief that the thorough training of even a small group of virile men in the theory and practice of medical administration would materially enhance medical efficiency in this country, and that the time is ripe for such an undertaking. In this connection, let us glance at some of the features of the present situation.

Reports published by the American Medical Association have shown that only a small proportion of the hospitals have interns, the latest data showing the number to be only 17.4 per cent. It is not surprising, therefore, that the American College of Surgeons is finding that few hospitals keep adequate records of their clinical and laboratory work, and are calling for such records as a necessary condition of efficiency. How this deficiency is to be supplied, in the majority of hospitals which are lacking in interns or other personnel competent to keep such records, has not been suggested.

The medical colleges make more and more difficult the pathway of the medical student, while at the same time the number of hospitals increases; consequently, the relative supply of prospective interns rapidly decreases. Moreover, the colleges are dissatisfied with the clinical instruction that hospitals offer their graduates, and with greater and greater emphasis they demand that hospitals which are permitted to employ medical graduates as interns should be brought under the control of the college faculties, at least so far as the training of interns is concerned; to this demand the hospitals are reluctant to yield.

Epidemiologists call upon the hospitals for more complete and uniform morbidity reports; the hospitals reply that they are too poor to undertake additional clerical labor.

Many physicians believe that dispensaries should cease offering free service to the public; the dispensary managers, however, stoutly maintain that the prevalence of poverty amply justifies the prevailing dispensary system.

Social service workers declare that physicians fail to take into consideration the social backgrounds of disease; according to them, the viewpoint of the physician must be radically changed before treatment can become generally efficient. In actual practice, the viewpoint of the physician changes or shifts very slowly.

When the social service worker asks not only for more thorough treatment but for a more careful inquiry into the causes of disease, he touches elbows with the apostles of preventive medicine, whose program embraces eugenics, prenatal care, infant hygiene, school clinics, physical training, the development of recreational facilities, venereal prophylaxis and treatment, industrial hygiene, periodic physical examination, model housing, diagnostic laboratories, and the enactment and enforcement of countless sanitary regulations in urban and rural communities. The relation of the practicing physician to these activities lacks definition.

In letters to the medical press, physicians demand that the state abstain from medical practice; but these very objectors send specimens to laboratories maintained by state and municipal departments of health and thus virtually appeal to the state to aid them in the diagnosis of their cases.

Looking over the country, one observes the transformation of a world-renowned surgical center into a huge diagnostic clinic where group medicine is practiced with such success that surgeons who visit the clinic to study surgical technic become fired with the idea of group medicine and go home eager to form partnerships for the practice of cooperative medicine. On arriving home they discover that group medicine can only be practiced ideally in an institution, and that those who are in charge of suitable institutions, such as hospitals and dispensaries, are not quite ready to turn them over to medical reformers, however well meaning or respectable.

At a critical period of the country's history the established scheme for the training of qualified nurses breaks down, and the leaders of the nursing profession fail to propose adequate measures of relief. In three states there are presented simultaneously six different plans for the solution of the nursing problem; a deadlock ensues, and the country's need remains unsatisfied.

In a thousand communities already possessing imperfectly developed hospitals—hospitals which are wretchedly poor in laboratory equipment and organization—a thousand new hospitals are launched, destined to be poorer still in the essential means of scientific diagnosis and treatment.

Hospitals for the exclusive practice of specialties are begun in communities where the obvious need is the creation of special departments in existing but imperfectly developed "general" hospitals.

Public, semipublic, and private hospitals spring up side by side; why one and not the other, is a question that is hardly considered.

I need not go on. What has been said is sufficient to indicate the lack of clearly defined principles in the development of the machinery of the country for dealing with disease. The muddle seems almost hopeless, but one need not despair if the medical profession can only be made to realize the need of trained leadership. The first thing necessary is to recognize the existence of a tangible problem in which physicians and the public are jointly interested, namely, the problem of medical administration.

Heretofore nobody has been trained in the study of medical administrative problems. The country has drifted into its present chaotic condition because it has been nobody's business to furnish guidance in matters of medical administration. Busy clinicians have here and there thrown out

suggestions or made spasmodic efforts for improvement, but for the most part the business of organizing medicine has been left to nonprofessional outsiders. Curiously enough, the need of special training in public health administration is obtaining ample recognition, though this need is no greater than the need of training in medical organization and administration per se. When a state is moved to investigate the need of sickness insurance, and as a preliminary step undertakes to ascertain whether its citizens are receiving adequate medical care, a commission is appointed which usually consists of members of the legislature who are about as competent to report on the subject of medical efficiency as a committee of chimney sweeps would be to report on a problem in astronomy. I have sometimes agreed and sometimes disagreed with the conclusions of legislative committees that have undertaken the investigation of medical problems, but have never been able to bestow much respect on the evidence adduced by such committees in support of their contentions.

The country may muddle its way through. If so, it will be at the cost of untold suffering and at the needless expense of countless lives. Think our way through we never shall, if the thinking is left to men whose thought and strength are chiefly absorbed by other tasks. Incomparably the best way to treat the matter is to have the study of medical administration organized and directed under university auspices. Universities which already offer courses leading to the degree of doctor of public health are in a favorable position to direct the training of men in medical administration. The two courses would dovetail admirably.

The objection may be raised that teachers of medical administration are lacking. This is true; and therefore, at the outset, the work of special students in this field would have to be to a great extent self-directed; but the gathering of a number of such students at a single center, the assignment to them of appropriate topics of investigation, and the preparation of a series of related theses on phases of medical administration would soon produce a body of thought and fact about which subsequent investigation and teaching could be readily grouped.

The students permitted to participate in this work should be graduates in medicine. Eventually special prevocational courses could be arranged for medical students who purposed following administrative rather than clinical or research medicine; in the prevocational education of the future medical administrator, emphasis should be placed not so much on chemistry, biology, and physics as on psychology, economics and sociology.

What university will be the first to undertake this necessary and valuable work? What philanthropist or philanthropic foundation will be the first to encourage it?

S. S. Goldwater, M.D., New York.

## DR. MORTIMER FRANK (1874-1919)—A MEDICAL HISTORIAN

*To the Editor:*—The sudden death of Dr. Mortimer Frank of Chicago, of whom an obituary appeared in The Journal April 26, was a shock to those of us in the East who had come to know him especially as a research worker in medical history.

Dr. Frank began the study of medical history in his papers on the charlatan oculists, "John Taylor and Sir William Read" (1905), which were followed by others on the Resurrectionists (1907), "Philip Syng Physick" (1911), "Caricature in Medicine" (1911), "Medicine in English Literature Before the Eighteenth Century" (1912), and "Medical Instruction in the Seventeenth Century" (1915). In 1915, he became secretary of the Chicago Society of Medical History and editor of its *Bulletin*, which he much improved in style and format. In 1916, Dr. Frank was invited to read his paper on the "Discovery of the Secretory Glands" before the Medical History Clubs at the Johns Hopkins and Harvard universities. For the Vesalian quatercentenary (1915), he published, at his own expense, a handsome reprint of Henry Morley's "Anatomy in Long Clothes." Dr. Frank was a connoisseur and collector of medical engravings, fine bindings and rare medical books. His private collections were the admiration of his friends and from these he generously donated to the Surgeon-General's Library anything not in its catalogue. At the June meeting of the American Medical Association in 1918, he gave an exhibit of old medical books from his library, with a descriptive catalogue, which is in print. Before his death, he had prepared a lantern-slide lecture on unique title pages in the older medical literature. Dr. Frank's interest in the subject of medical illustration led him to undertake, in 1916, the translation of Choulant's "History of Anatomical Illustration." This book, published in 1852, is one of the classics of medical literature, a work of unsurpassed thoroughness, a sort of *Gradus ad Parnassum* for those who would essay the difficult heights which Choulant has scaled, for the earlier history of anatomy, from Leonardo to the time of Bichat, is mainly in the manuscript illustrations and the illustrated texts. In our days of distracting and divided interests, no man could hope to know the approaches to anatomy in the older writings who has not mastered at least the essentials of this book. Few of us would have cared or dared to attempt such a translation. Choulant is a work of the highest scientific merit, but, in the original German it is not a readable book. Its author wrote in the time of Hegel, his bent was philosophic, his sentences of the sesquipedalian order, like the "long rollers" in Gibbon or Swinburne, or the prosy periods voiced from the pulpit in the Georgian period. Dr. Frank cleverly overcame the almost insurmountable difficulties of rendition by bisecting the long choulantian sentences or dissecting out their meaning, so that his translation now stands, in clean-cut intelligible English, as something viable and readable for modern students. To the original work, long since out of print, the translator added completed bibliographies and an exhaustive *compte rendu* of accumulated research work since the time of Choulant, a man-sized performance in itself. With new illustrations, this modernized Choulant, now in the hands of publishers, may be, in course of time, a *vade mecum* for the professor of anatomy, the medical librarian and the art school.

Dr. Frank was a sportsman and a gentleman, a thoroughly likeable and loveable man, a very faithful and loyal friend.

To those who knew him well, it will always seem triste and unthinkable that he should have been cut down in his prime, just before the appearance of the book to which he had devoted so much of praiseworthy competence and such ardors of patient research.

F. H. Garrison, M.D., Washington, D. C.

## "IDENTITY OF THE POPPY IN FLANDERS FIELDS"

*To the Editor:*—A correspondent in The Journal, April 26, wondered whether Flanders poppies are of the opium kind. Yesterday in a New Hampshire car I saw a loan appeal illustrated with a Flanders grave on which were red poppies with a black center. On talking about it, I learned that the poppy is commonly regarded as the flower of sleep or of death. I enclose two quotations and a reference to a picture, Beata Beatrix, which is in the museum of the Chicago Art Institute:

> On the grass of the cliff, at the edge of the steep,
> God planted a garden, a garden of sleep;
> 'Neath the blue of the sky, in the green of the corn,
> It is there that the regal red poppies are born.
> In my garden of sleep, where red poppies are spread,
> I wait for the living, alone with the dead.
>
> —*From a song by de Lara.*

> Here are cool mosses deep,
> And through the moss the ivies creep,
> And from the craggy ledge
> The poppy hangs in sleep.
>
> —Tennyson: *The Lotus Eaters.*

The dove bears the poppy, symbol of sleep eternal, the death flower—to Beatrix as the sundial reaches its shadowless hour.—Rossetti: Beata Beatrix.

F. K. Bryant, Chicago.

# Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

## THE DIFFERENTIAL STETHOSCOPE

*To the Editor:*—Please describe the differential stethoscope mentioned in the abstract of Thorne's article published in the London Practitioner, April, 1919.

P. W. V., Columbia, Mo.

ANSWER.—Thorne describes this instrument as follows:

"The differential stethoscope consists of the usual binaural ear-pieces and tubing, which are connected with a hollow aluminum chamber, divided transversely by a septum into two compartments, the upper being connected to the ear-pieces by the tubing, the lower having the chest-piece attached to it. The center of the dividing septum is pierced by a conical opening, into which a metal cone can be inserted or withdrawn, closing it completely or varying the size of the opening, and thus allowing more or less of the sounds to reach the examiner's ear. The position of the cone is indicated by a pointer on the upper surface of the chamber, and the figures shown there give the values of the sounds passing through the aperture with the cone in varying positions.

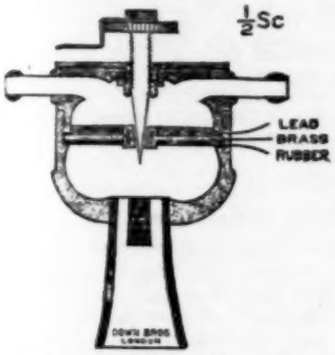


Fig. 1.—Cross section of sound chamber of the stethoscope.

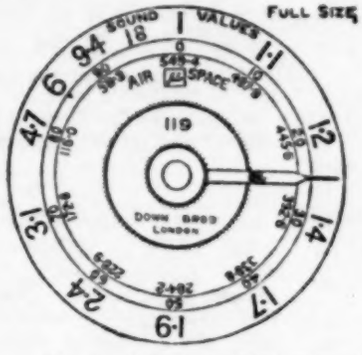


Fig. 2.—Indicator giving value of sounds.

It has been found by experience that the value of the first sound at the apex in a normal healthy heart is about double that of the second sound at the base. For example, in a healthy heart, if the first sound at the apex registers 3.2, the second sound at the base will be in the region of 1.6; or if the former is 4.7, the latter will be about 2.4. This is considered the normal 100 per cent. ratio. A ratio falling below 50 per cent. normal standard is evidence of myocardial debility. To use the differential stethoscope, apply the chest-piece to the apex of the heart, having previously rotated the pointer one complete revolution from left to right from the closed position so that it stands at 0. Now slowly close it, turning the pointer from right to left until the first sound is just not audible, mark the figure on the dial, perhaps it is 3.2. Now place the chest-piece over the aortic base, and repeat the same procedure, noting the figure at which the second sound is just not audible, say it is 2.4. The figures 3.2 and 2.4 are about 25 per cent. normal. This would indicate a weakness of the myocardium. A normal heart would probably have given a reading of 3.2, 1.6; 4.7, 2.4; or 6, 3.2. That is about 100 per cent. normal standard."

In *The Practitioner* (**100**:234, March, 1918), O. Peyton gives a very detailed description of this instrument and also publishes some illustrations. He calls attention to the importance of having rubber tubes which are at least two feet long and preferably of not a very thick wall. The object for having these long tubes is to permit of the movement of the chest-piece from one area to another without moving the ear-pieces. The reason why the walls of these tubes should not be too thick is to prevent the conduction of sound along their walls; the sound should be air-borne only.

## MEDICAL PRACTICE IN PORTO RICO AND CUBA

*To the Editor:*—I desire to know the requirements for practice in Porto Rico and Cuba, and the possibilities for practice for a physician who speaks Spanish. Am most interested in Porto Rico.

D. C. B.

ANSWER.—The requirements for medical practice in Porto Rico and Cuba are given in the Association publication, "Laws Regulating the Practice of Medicine in the United States and Eleswhere." The following information is summarized from this book:

### PORTO RICO

Physicians are admitted to practice only after passing an examination in the usual subjects. The examinations are rather rigid and are conducted in English or Spanish, as the applicant may desire. The secretary of the board of examiners is Dr. M. Quevedo Báez, San Juan, and the fees are $25.

### CUBA

Foreign physicians are admitted to practice only after passing an examination, preliminary to which applicants must submit for approval their diplomas to the Department of Public Instruction. All examinations are held in Spanish, or through an interpreter, for whose services the applicant must pay $15. The fees are $50.

The possibilities for practice in both Porto Rico and Cuba depend entirely on the personality of the physician. Some American physicians have made a success of their profession in Porto Rico and likewise Cuba; others have failed. Of course, any physician going to either island would have to count, as anywhere else, on a period of probation, until he made a name for himself. The largest American colony in Porto Rico is located at San Juan and vicinity; in Cuba at Havana and the island of Pines. Some American physicians have quite a clientèle among the native population, but, as a rule, they have long resided there and are familiar with local customs and language.

An article on "Genital Defects and Venereal Diseases in Porto Rico," in which conditions in the island were incidentally discussed, was published in THE JOURNAL for March 29 and in our Spanish Edition for April 15.

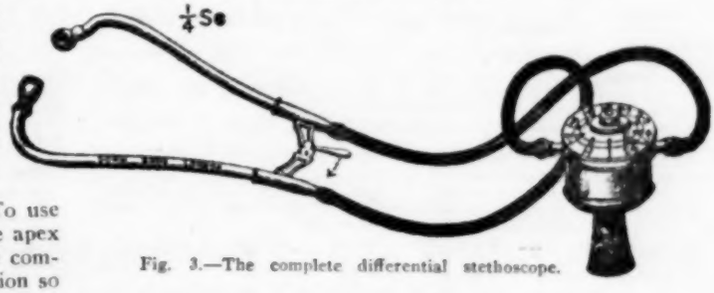


Fig. 3.—The complete differential stethoscope.

## CHICKENPOX LESIONS IN PALMS OF HANDS

*To the Editor:*—Does the eruption in chickenpox ever occur in the palms of the hands or on the soles of the feet? Is this a pathognomonic sign of smallpox?

H. W. G.

ANSWER.—The extremities are rarely involved in chickenpox, whereas they are usually involved more or less extensively in smallpox. The character of the eruption is quite distinctive. In smallpox it is hard, "shotty," indurated, sharply circumscribed, umbilicated, whereas the opposite is true of the chickenpox lesion. This will help to remove any doubt that might exist as to the nature of the disease, if any eruption is present on the palms of the hands or soles of the feet.

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**Social Questions and Infant Mortality.**—To correct the evils which underlie a high infant mortality rate, we must face all the great social questions of our age.—*Public Health News*, New Jersey.

# Medical Education and State Boards of Registration

## COMING EXAMINATIONS

ALABAMA: Montgomery, July 8. Chairman, Dr. S. W. Welch, State Capitol, Montgomery.

ARIZONA: Phoenix, July 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 23-26. Sec., Dr. Charles B. Pinkham, 904 Forum Bldg., Sacramento.

COLORADO: Denver, July 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 8-9. Sec., Regular Bd., Dr. Charles A. Tuttle, 196 York St., New Haven; Sec., Homeopathic Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.

DELAWARE: Wilmington, June 17-19. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 8-10. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

FLORIDA: Jacksonville, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

FLORIDA: Eclectic Board, Jacksonville, June 9-10. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.

GEORGIA: Atlanta and Augusta, June 5-6. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 16-19. Supt. of Registration, Mr. F. C. Dodds, Springfield, Ill.

IOWA: Iowa City, June 12-14. Sec., Dr. Clifford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 17. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, July 1-3. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, July 1-3. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.

MAINE: Augusta, July 1-2. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MICHIGAN: Ann Arbor, June 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 3-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 24-25. Sec., Dr. W. S. Leathers, University.

MISSOURI: St. Louis, June 9-11. Sec., Dr. George H. Jones, State House, Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEBRASKA: Lincoln, June 30-July 2. Sec., Dr. H. J. Lehnhoff, 514 First National Bank, Lincoln.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Alex. MacAlister, 438 E. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27, Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

NORTH CAROLINA: Raleigh, June 23. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 3-6. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 8-9. Sec., Dr. J. J. Williams, Weatherford.

OREGON: Portland, July 1-3. Sec., Dr. Frank W. Wood, 559 Morgan Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 8-10. Sec., Nathan C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 10-11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 8. Sec., Dr. P. B. Jenkins, Wauhay.

TENNESSEE: Knoxville, Memphis and Nashville, June 13-14. Sec., Dr. A. B. De Loach, Exchange Bldg., Memphis.

TEXAS: Austin, June 24-26. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 7-8. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 26-28. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

WASHINGTON: Seattle, July 1-3. Sec., Dr. C. N. Suttner, 415 Old National Bank Bldg., Spokane.

WISCONSIN: Milwaukee, June 24-26. Sec., Dr. J. M. Dodd, 220 E. 2nd. St., Ashland.

## What Constitutes a "College"

Since all medical schools are now requiring for admission "two years of college work" they will be interested in the definition of a college which was adopted by the National Conference Committee on Standards of Colleges and Secondary Schools at its meeting held in New York City, March 24, 1919. This definition is as follows:

1. A requirement for admission of fifteen (15) units of secondary work, not more than two (2) units of condition being allowed, all special students under 21 years of age being required, except in rare and unusual circumstances, to meet all the requirements for admission, preparatory courses, if any, being distinct in faculty, students, and discipline.

2. A program of studies having a reasonable relation to the resources of the institution.

3. A liberal curriculum, with advanced work in several fields, and a reasonable margin for free election, the curriculum to be of such a character as to qualify for admission to a graduate school of recognized standing.

4. A college year of thirty-two (32) weeks of actual instruction.

5. Eight (8) departments, each having at least one full-time teacher of professorial rank.

6. A staff, two-thirds of which are of professorial rank, having had at least two (2) years of study in a graduate school of recognized standing, receiving salaries of two thousand dollars ($2,000) a year or more, and teaching not more than sixteen (16) hours a week.

7. A productive endowment, beyond all indebtedness, of three hundred thousand dollars ($300,000).

8. An annual income for current expenses of forty thousand dollars ($40,000) a year, at least three-fifths of which is expended for instruction.

9. An expenditure of one thousand dollars ($1,000) a year for laboratory equipment and apparatus, and of one thousand dollars ($1,000) a year for books and periodicals.

10. An annual or biennial published report of assets, income, expenditure, faculty, curricula, and student body.

## New York January Examination

Mr. George M. Wiley, director, Examinations and Inspections Division, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan. 28-31, 1919. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 93 candidates examined, 60 passed and 33 failed. The following colleges were represented:

| College | Year Grad. | No. Licensed |
|---|---|---|
| **PASSED** | | |
| Leland Stanford Junior University | (1916) | 1 |
| Yale University | (1918) | 1 |
| Illinois Medical College | (1898) | 1 |
| University of Maryland | (1916) | 1 |
| Boston University | (1917) | 1 |
| Tufts College Medical School | (1915) (1917, 2) (1918) | 4 |
| University of Michigan Medical School | (1918) | 1 |
| Albany Medical College | (1918) | 1 |
| Columbia University | (1917) (1918, 11) | 12 |
| Cornell University | (1918) | 2 |
| Fordham University | (1918) | 2 |
| Long Island College Hospital | (1918) | 4 |
| New York Homeopathic Medical College and Flower Hospital | (1913) (1914) (1917) (1918, 2) | 5 |
| New York Medical College and Hospital for Women | (1917) | 1 |
| University and Bellevue Hosp. Med. Coll. | (1918) | 10 |
| University of Buffalo | (1917) (1918, 3) | 4 |
| Jefferson Medical College | (1916) | 1 |
| University of Pennsylvania | (1917) | 2 |
| Medical College of the State of S. C. | (1911) | 1 |
| Medical College of Virginia | (1917) | 1 |
| University of Virginia | (1917) | 1 |
| McGill University | (1918) | 1 |
| Queen's University | (1914) | 1 |
| Syrian Protestant College | (1914) | 1 |
| **FAILED** | | |
| Georgetown University | (1917) | 1 |
| Howard University | (1918) | 1 |
| University of Louisville | (1902) | 1 |
| College of Physicians and Surgeons, Baltimore | (1912) | 1 |
| Tufts College Medical School | (1918) | 1 |
| Fordham University | (1917) | 1 |
| New York Homeo. Med. College & Flower Hospital | (1916, 2) (1917, 3) (1918, 4) | 9 |
| University and Bellevue Hosp. Med. Coll. | (1918) | 2 |
| University of Oklahoma | (1918) | 1 |
| Jefferson Medical College | (1899) (1915) | 2 |
| University of Pennsylvania | (1917) | 1 |
| Western Pennsylvania Medical College | (1896) | 1 |
| University of Vermont | (1906) (1917) | 2 |
| Medical College of Virginia | (1915) | 1 |
| McGill University | (1915) (1918) | 2 |
| University of Toronto | (1898) (1918) | 2 |
| University of Naples | (1902) (1905) (1912) | 3 |
| University of St. Joseph | (1894) | 1 |

Mr. Wiley also reports that 5 candidates were licensed by indorsement of credentials from March 1 to April 1, 1919, and 1 candidate was licensed on account of having been practicing in the state for several years. The following colleges were represented:

| College | Year Grad. | Indorsement with |
|---|---|---|
| Howard University | (1915) | New Jersey |
| Indiana University | (1910) | Indiana |
| University and Bellevue Hospital Med. Coll | (1915) | New Jersey |
| Miami Medical College | (1905) | Ohio |
| University of Naples (1902) Yrs. of Practice | (1906) | Delaware |

## Book Notices

ESSENTIALS OF SURGERY: A TEXTBOOK OF SURGERY FOR STUDENT AND GRADUATE NURSES AND FOR THOSE INTERESTED IN THE CARE OF THE SICK. By Archibald Leete McDonald, M.D., the Johns Hopkins University. Cloth. Price, $2 net. Pp. 265, with 46 illustrations. Philadelphia. J. B. Lippincott Company, 1919.

For the past five years it has been the fortune of the reviewer to be called on to give the course in junior surgery at a large nurses' training school. He has often been at a loss to recommend to his students sources from which they might supplement the lectures. The average textbook on surgical subjects is written for the medical student or graduate in medicine, and hence presupposes a thorough medical training on the part of the reader; such books, therefore, are confusing to the student nurse, and she often gains an erroneous impression of a subject, even if she may be persuaded to struggle through the appropriate chapters of the recognized authorities.

"Essentials of Surgery" appears to have been written with a clear understanding of the needs and of the capacity of those for whom it is intended. In the preface, the author states:

> These notes are prepared for the use of senior nurses in connection with a course on the principles of surgery, in the belief that the nurse can more intelligently assist in the care of her patient if she has a reasonable conception of the conditions present and of the indications to be met in the treatment. . . . The course covers the general principles of surgical diseases and the pathologic changes which result.

The subject-matter is presented in a concise, logical fashion, with due regard to scientific exactness, and yet without sacrificing simplicity of statement or becoming a mere dry recital of facts. Considering its size, the work is a veritable mine of information, wonderfully condensed, and even the medical student preparing for examination would find here a useful guide.

At the end of each chapter is a table of demonstrations, presumably for the use of the lecturer in amplifying the text. They appear to be worth while.

Thirty pages are devoted to a glossary of words in everyday use in surgery, but which, to the uninitiated, may well be most confusing. While all these terms appear in every medical dictionary, there still seems to be justification for their inclusion in a glossary in this book, since no one can understandingly read, or listen to discussions, concerning a science with the terminology of which he is unfamiliar; moreover, by simply defining terms, one can many times impart information in a few words which might otherwise require pages of explanation.

While heartily approving of the book as a whole, it may not be amiss to call attention to a somewhat careless use of English which occasionally appears. For instance, on page 4, we read: "An antiseptic or germicide is an agent which destroys bacteria, including the following: *A*, direct heat; *B*, steam; *C*, chemicals." While, of course, no one would misunderstand the author's meaning, yet he definitely appears to say that direct heat, steam and chemicals are bacteria subject to destruction by an antiseptic or germicide. Fortunately, lapses of this kind are not common enough to detract from the usefulness of the book, and they are mentioned chiefly to magnify the necessity for careful proof-reading and attention to grammatical constructions in the preparation of books of reference.

BEVERAGES AND THEIR ADULTERATION: ORIGIN, COMPOSITION, MANUFACTURE, NATURAL, ARTIFICIAL, FERMENTED, DISTILLED, ALKALOIDAL AND FRUIT JUICES. By Harvey W. Wiley, M.D. Cloth. Price, $3.50 net. Pp. 421, with 42 illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

This, a companion volume to the author's earlier work, "Foods and Their Adulterations," comes at an especially appropriate time when the greatest experiment in changing the beverage-habits of a nation is about to be initiated. More than half of the book is devoted to a consideration of beverages of the alcoholic type. Beverages are conveniently divided by Wiley into two main classes, (1) those which, in addition to having condimental properties, have also food value, and (2) those which are purely condimental in character. A subdivision is made of those beverages which contain toxic properties, whether developed naturally in the manufacture of added to the product afterward. The alcoholic beverages, coffee and tea come in this division because of the alcohol or caffein they contain. There would also be included those "soft drinks" to which caffein and (nowadays rarely) cocain have been added. The book, as its title denotes, does not take up for consideration questions of health, hygiene or ethics, although each of these problems is incidentally discussed as occasion seems to demand. The object of the volume is, however, to describe the origin, methods of manufacture, composition and the conditions attending transportation and use of the common beverages. Dr. Wiley's long connection with the Bureau of Chemistry and his uncompromising attitude toward all forms of fraud and misrepresentation give his pronouncements on various problems connected with what may be called the beverage industry of the country, both weight and interest. As its authors says, the book is "not written for the scientific investigator but for the average sober-minded, reasonably well-educated American citizen, who is daily taking a greater and deeper interest in what he eats and drinks." To this class one may fairly assign the rank and file of the medical profession, and the book is one that the average physician will find a valuable addition to his library of semitechnical knowledge.

LA TUBERCULOSIS: CONOCIMIENTOS UTILES PARA EL QUE LA PADECE, QUIENES CON ÉL VIVEN Y PARA TODOS LOS QUE DESEEN PONERSE AL ABRIGO DE LA ENFERMEDAD. Distribuido por el State Tuberculosis Sanatorium, Bureau of Correspondence and Information. Carlsbad, Tom Green County, Texas. Rústica. Pp. 35. New York: The National Tuberculosis Association, 1919.

This is a Spanish translation of the pamphlet for popular use previously issued by the National Tuberculosis Association. The prevalence of tuberculosis among the Spanish-speaking population of the Southwest constitutes a serious problem, and the action of the National Tuberculosis Association in making the useful information in this pamphlet available in Spanish is praiseworthy.

## Medicolegal

### Physician as Witness Getting Percentage of Judgment

(*Davis v. Smoot* (*N. C.*), *97 S. E. R. 488*)

The Supreme Court of North Carolina affirms a judgment in favor of the plaintiff, administrator of the estate of one A. M. Davis, against the defendant, a physician, for $125, the amount which the defendant had collected of said A. M. Davis for testifying as a witness in a personal injury case against the city in which said A. M. Davis recovered $625. The court says that these issues were submitted to the jury in this action against the physician: (1) Did the defendant knowingly, designedly, wilfully, and maliciously and unlawfully charge A. M. Davis 20 per cent. of the amount recovered by A. M. Davis from the city as alleged in the complaint? Answer: Yes. (2) What amount, if anything, is the defendant indebted to the plaintiff? Answer: $125. The defense was rested on the ground that the agreement was void as against public policy, and hence that, the money having been paid, the plaintiff administrator could not recover it back. It is public policy that such a contract as this cannot be enforced, but it is also public policy that such a transaction as this cannot be allowed to stand simply because the defendant was able to enforce payment of the illegal exaction. Besides, there was in this case evidence that the defendant physician gave said A. M. Davis morphin and other medicine; that the latter's mind while the defendant was visiting him and giving him morphin was in a very unsatisfactory condition; and that the defendant, who "had made a very good witness," collected the $125 with great promptness after A. M. Davis had received it.

The ground of the recovery sought by the plaintiff administrator was, not that the defendant swore falsely in favor of A. M. Davis, but that he made representations that his

testimony would be more effective if he were paid 20 per cent. of the amount A. M. Davis recovered, and that after the trial he collected said 20 per cent. out of the client over and above his expert fee of $10, allowed by the court. The court not only will not enforce a contract of this kind, but it will compel repayment when collection has been made and there is evidence that the party making payment was under treatment and also under the influence of morphin administered by the defendant until after the money was paid him, and that thereafter when his physician was changed the patient's mind improved, and he made an effort to secure the return of the money.

On the verdict on the first issue, that this money had been "designedly, wilfully, maliciously, and unlawfully collected by the defendant," the court very properly gave judgment for its return. No court with a proper sense of its own dignity and of purity in the administration of justice, which should always be above suspicion, could permit such a transaction to stand, simply because the offender has been quick enough to secure payment before proper action could be taken. The defendant on the verdict was guilty of gross contempt of court. It is commended to the consideration of the court below whether, on the evidence in this case, proceedings in contempt should not be taken by the court in vindication of public justice, and it is for the solicitor to consider whether a bill should not be laid before the grand jury for indictment of perjury in view of the intimation by the defense in this trial that A. M. Davis was unduly benefited by the too favorable testimony of the defendant in the trial of the action against the city. The transaction is not one that the court can in justice to itself allow to go off without investigation. The answer did not deny the receipt of the 20 per cent. by the defendant, but alleged that it was a voluntary gift. But the defendant did not go on the stand nor put on any evidence to support such defense. This certainly calls for investigation by the court. Such conduct by a witness as was here alleged and found true by the verdict strikes at the very root of the administration of justice. The courts cannot permit it to pass by unnoticed.

### Charter Not Decisive of Character of Hospital

*(Stewart v. California Medical Missionary & Benevolent Association (Calif.), 176 Pac. R. 46)*

The Supreme Court of California, in affirming judgments in favor of husband and wife on account of the latter's having been burned by a hot water bag while she was a patient in the defendant's hospital, says that the defendant claimed that it was not liable for such injuries as it was a charitable corporation. The purposes outlined in its articles of incorporation were almost as broad as the field of Christian philanthropy, extending its limits throughout the world. It was obvious, however, that the intent of this corporation was to utilize the profits made by one institution in furthering the interests of that and of other institutions, or religious or hygienic propaganda, or for manufacture of hygienic goods, etc. Moreover, whatever the intent of the organization generally, it was evident that the hospital itself was being used as a money-making institution and should be treated as such, unless the fact that the corporation was a nonprofit making corporation and that all money made in the hospital was ultimately devoted to some charitable purpose would prevent that. The character of the institution was to be determined, not alone by the powers of the corporation as defined in its character, but also by the manner of conducting the hospital. The trial court found that the defendant had never received any patients for prices less than those ordinarily charged by similar institutions conducted in the state for profit, and that no charity patients would be received or had been received except by previous arrangement. The supreme court holds that the trial court was required to look, not only to the defendant's articles of incorporation and by-laws to determine the character of the hospital conducted by it, but also to the method of transacting the business of the corporation. Its finding that the hospital was in fact operated for profit was supported by the evidence, and the supreme court sees no good reason for exempting the defendant from the liability incurred by other hospitals conducted for profit.

# *Society Proceedings*

## COMING MEETINGS

**American Medical Association, Atlantic City, June 9-13.**

American Academy of Medicine, Atlantic City, June 9-10.
American Association of Anesthetists, Atlantic City, June 9-10.
Am. Assn. of Genito-Urinary Surgeons, Atlantic City, June 16-17.
Am. Assn. of Indust. Physicians and Surgeons, Atlantic City, June 9.
Am. Assn. of Pathologists & Bacteriologists, Atlantic City, June 16-17.
American Association of Physicians, Atlantic City, June 16-17.
American Climatological & Clin. Assn., Atlantic City, June 14-17.
American Dermatological Association, Atlantic City, June 16-18.
American Gastro-Enterological Assn., Atlantic City, June 9-10.
American Gynecological Society, Atlantic City, June 14.
American Medico-Psychological Assn., Philadelphia, June 18-20.
American Neurological Association, Atlantic City, June 16-18.
American Ophthalmological Society, Atlantic City, June 16-17.
American Orthopedic Association, Atlantic City, June 16-17.
American Otological Society, Atlantic City, June 16-17.
American Pediatric Society, Atlantic City, June 16-18.
American Proctologic Society, Atlantic City, June 7-9.
American Psychopathological Association, Atlantic City, June 19.
American Society of Tropical Medicine, Atlantic City, June 16-17.
American Surgical Association, Atlantic City, June 16-18.
American Therapeutic Society, Atlantic City, June 6-7.
Arizona Medical Association, Globe, June 2-3.
Assn. of American Peroral Endoscopists, Brooklyn, June 5.
Assn. for the Study of Internal Secretions, Atlantic City, June 9.
Congress American Phys. & Surgs. of N. A., Atlantic City, June 16-17.
Maine Medical Association, Portland, June 18-19.
Massachusetts Medical Society, Boston, June 3-4.
Missouri State Medical Association, Excelsior Spgs., May 26-28.
National Assn. for Study of Epilepsy, Sonyea, N. Y., June 6-7.
National Tuberculosis Association, Atlantic City, June 12-14.
Nevada State Medical Association, Lake Tahoe, June 20-21.
New Jersey Medical Society, Spring Lake, June 24-25.
North Dakota State Medical Association, Grand Forks, June 24-25.
Rhode Island Medical Society, Providence, June 5.
Southern Minnesota Medical Assn., Rochester, June 23-24.
Western Roentgen Society, Cleveland, June 5-6.

## MEDICAL SOCIETY OF THE STATE OF NEW YORK

*One Hundred and Thirteenth Annual Meeting, held at Syracuse, May 6-8, 1919*

The President, DR. THOMAS H. HALSTED, Syracuse, in the Chair.

### Selection of the Proper Operation in Empyema

DR. HOWARD LILIENTHAL, New York: Empyema is not a disease per se, but a complication. The more usual forms of pyothorax are: (1) that resulting from pneumonia; (2) from rupture of a lung abscess; (3) chronic empyema with thoracic fistula, and (4) traumatic empyema with or without infected hemothorax. Thorough exploration of the thorax is indicated whenever one of the usual minor operations fails to cure, and I advise fluoroscopic examinations during treatment. Unless there is perfect access to all parts of the infected cavity, the Carrel-Dakin treatment will rarely succeed, but in properly selected cases it should be tried persistently.

### Colon Bacillus Pyonephrosis in Infancy

DR. FRANK J. WILLIAMS, Albany: My patient was a 2-weeks-old male infant. The onset was sudden; death occurred one week later from colon bacillus septicemia. The most prominent symptoms were marked abdominal distention, severe pain in the abdomen and frequent, loose, green stools. The urine contained albumin and a large amount of pus. Postmortem examination revealed two abscesses in the left kidney and diffuse nephritis in both kidneys. The pelvic portions showed comparatively slight involvement. The mucosa of the entire urinary tract—ureters, bladder and urethra—was involved in the inflammatory process. Pus from the kidney yielded colon bacillus in pure cultures. This case gives evidence of high pathogenicity on the part of the colon bacillus for the kidney substance in young infants in whom the activities of this organism are less inclined to be limited to the pelvic portion.

### Anesthesia and Eutocia

DR. C. HENRY DAVIS, Milwaukee: Safety and cleanliness in obstetrics must be considered more important than

the method of relieving pain. If the method of relieving pain does not increase the danger to mother or fetus, it should be employed. The choice and application of the anesthetic must vary with the patient and operator, as in other surgical work, but it should not be withheld until the perineal stage. There are no statistics to indicate that the proper use of chloroform, ether or nitrous oxid-oxygen during labor has increased the number of stillbirths or the number of infants dying during the first week of life. Ether, unless contraindicated, is considered the inhalation anesthetic of choice for long operations during pregnancy or labor. Nitrous oxid-oxygen analgesia has proved most satisfactory for the painful second stage of labor.

Every pregnant woman should know the great importance of prenatal care. She should appreciate the advantages of confinement in a hospital by a well trained obstetrician whose first consideration is safety. She should know that anesthetic agents carefully selected and administered may not only mitigate the pain of labor, but also favor eutocia.

### Acute Thyroiditis

DR. GEORGE E. BEILBY, Albany: In a series of ninety-one cases of various forms of thyroid lesion, in which an operation was performed, I have met with three instances of acute thyroiditis. In two of the cases, infection occurred in normal thyroid glands. The third case was an infection of a cystic adenoma of the thyroid. In two of the cases the infection was a direct extension from a laryngeal and tracheal infection. The infecting organism was a staphylococcus. The third case occurred during an attack of influenza and represented a hematogenous infection. Cultures in this case yielded a hemolytic streptococcus.

### Chronic Osteomyelitis Due to Gunshot Fractures

DR. EDWIN W. RYERSON, Chicago: Successful treatment depends on thorough exposure of the diseased area, the removal of dead bone and the conversion of the cavity into a shallow depression. This often means the removal of two thirds or three fourths of the circumference of the bone and of a considerable extent of the longitudinal surface above and below the cavity. Only enough bone may be left to preserve the continuity and to prevent shortening. Apparatus or splints may be required to prevent fracture. The periosteum must always be conserved. Mechanical cleansing is more important than attempts at chemical sterilization. As the infection is generally of low grade, vigorous antiseptic treatment is not often necessary. The wounds are left wide open, and packed for a day or two until the bleeding has ceased. Three methods are then applicable. The Carrel-Dakin system is advised by many, to be followed by secondary suture when the bacterial count is sufficiently low. Another way is to use one-half strength neutral solution of chlorinated soda (Dakin's solution) to saturate a loose gauze packing, changed daily. The third is to expose the wound to air and sunlight, or incandescent electric light. The latter two methods are satisfactory in the majority of low-grade infections.

### Clinical Course and Treatment of Vincent's Angina

DR. CLEMENT F. THEISEN, Albany: I have seen three fatal cases, all in adults, seen so late that nothing could be done. The patients died of exhaustion brought on by inability to take sufficient nourishment. Cases that resulted fatally were either not treated at all or so late that the entire throat was involved in a destructive ulcerative process, and there was great toxemia and prostration. Almost all cases are simple and yield to treatment readily, if seen in the beginning before deep ulceration occurs. Decayed teeth are responsible for the development of the disease in the majority of the cases, except in children so young that dental caries has not started. In such cases the clinical course of the disease is much like that of an ordinary membranous nondiphtheritic angina.

In regard to treatment locally, the best results have been obtained in adults and children old enough to use gargles by the use of a strong solution of potassium chlorid, powdered alum, phenol, glycerol and water. When not possible to use this as a gargle, the throat can be sprayed with it. The arsenic preparations are almost specific in some cases. Locally, a solution of methylene-blue in alcohol, or a 50 per cent. dilution of alcohol, are very effective. Arsphenamin, locally or intravenously, is also used.

### Atropin Treatment of Pylorospasm and Pyloric Stenosis

DR. SIDNEY V. HAAS, New York: Hypertrophic pyloric stenosis is probably only an advanced degree of pylorospasm, both being manifestations in the syndrome of hypertonia. The hypertonic infant belongs to the spasmophilic group and presents the symptoms of vagotonia. Treatment by atropin is followed by rapid subsidence of symptoms, the results being so prompt and regular as to constitute specific action. The tolerance for milk, which is usually low in these infants, is at once materially increased, so that a normal amount may be utilized, a condition quite opposed to that existing before the atropin was begun.

Atropin is the logical treatment in these cases owing to its paralyzing effects on the vagus nerve endings. Certain facts must be borne in mind regarding atropin: the inconstancy in value, resembling digitalis in this respect; its rapid deterioration, and it must be used in sufficient dosage to be effective. A common dose of atropin for an infant of this type from a few weeks to a few months of age is from grain 1/50 to 1/25 in twenty-four hours, with an extreme of 1/16 grain, divided among the days' feedings, a 1:1,000 solution being used, beginning with one drop and increasing rapidly until effective. The most frequent toxic symptoms are flushing, mydriasis and dryness, which disappear promptly when the drug is withheld. There is no danger even when such symptoms present themselves.

### Treatment of Pernicious Anemia

DR. LOUIS V. HAMMAN, Baltimore: Pernicious anemia is inevitably fatal and treatment at best can but promote and prolong the remissions that characterize the natural course of the disease. There is no conclusive evidence to prove that one method of treatment brings on remission more constantly than another, nor that it more surely prolongs remissions thus begun. Spontaneous remission may be in every way as satisfactory, as remission following the use of any method of treatment. In pernicious anemia, as well as in all other conditions for which we have only symptomatic or palliative treatment, success depends more on a judicious selection from among all available methods of treatment and their proper combination than on a one-sided advocacy of a single method. Rest, feeding, arsenic, transfusion, the eradication of foci of infection and perhaps also splenectomy have a definite place in the treatment of pernicious anemia.

*(To be continued)*

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## *Current Medical Literature*

### AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Public Health, Boston

May, 1919, **9**, No. 5

*Legitimate Use of Narcotics in War Time. E. S. Bishop, New York.—p. 321.
*Mosquito Eradication in Southeastern Pennsylvania. B. F. Royer; C. A. Emerson, Harrisburg.
Examination of Colon Bacilli in Water. R. L. Kahn, Atlanta.—p. 333.
Venereal Disease Control in the Military Forces. W. A. Sawyer, U. S. Army.—p. 337.
Venereal Disease Control in Civilian Communities. C. C. Pierce, Washington.—p. 340.
*Children's Year Campaign. A. E. Rude, Washington.—p. 346.
Mental Hygiene and Departments of Health. C. M. Hincks, Toronto. —p. 352.
Median Endemic Index. J. S. Hitchcock; B. W. Carey, Boston.—p. 355.
Group Medicine. M. M. Davis, Boston.—p. 359.
*Health Officer and Enforcement of Law. C. V. Craster, Newark.—p. 362.
Medical Argument against Night Work Especially for Women Employees. E. R. Hayhurst, Ohio State University.—p. 367.

**Legitimate Use of Narcotics in War Time.**—The legitimate use of narcotics in the army in war time is roughly divided by Bishop into two broad divisions: First, the necessary administration of morphin to those who are addicted for the control of emergency or other indication—with which every competent physician or surgeon is familiar. To use morphin in such cases is not only legitimate, but failure to use it, Bishop says, would be inhuman and barbarous and result in the loss of hundreds of thousands of lives and the making of wrecks of hundreds of thousands of others. Second, the administration of opiates to those unfortunates, who either through their own ignorance or carelessness or through unavoidably prolonged legitimate or necessary medication have developed in their body the condition of opiate addiction disease—until such time as they can either be furloughed or discharged from active service for the radical arrest by competent medical care of their addiction disease mechanism.

**Mosquito Eradication in Southeastern Pennsylvania.**—The work done by Royer and Emerson at Hog Island and nearby places is given in considerable detail in this paper. It shows what can be done in malarial districts, how to organize and how to accomplish results. These results show that a comprehensive cooperative project embracing private corporations, municipal and state agencies is practical, providing the work is performed in accordance with a comprehensive plan previously approved by the various interests concerned, and general direction of the project placed in some unbiased central organization, so formed either by law or mutual consent that its jurisdiction covers the entire territory. This would seem to indicate that general supervision should be placed in some permanent, central authority having uniform powers and responsibilities, such as the state department of health. Benefits of mosquito eradication work are far-reaching, and include not only increase in value of properties within the immediate district but also general real estate values within a wide area. The same applies to the benefits to public health. The work carried on under the conditions set forth in this paper has had beneficial results as is proved by the fact that complaints from residents and workers in the district were almost unknown this past summer and that preparations are now being made for the cultivation of large areas of land which for years have remained idle, covered with a luxuriant growth of weeds and water vegetation.

**Children's Year Campaign.**—The recorded results of the weighing and measuring test give the largest mass of material ever gathered on the measuremens of young children. In a mid-western city of about 70,000 population, largely foreign, the immediate results of cooperation in Children's Year have been three child welfare nurses; a milk inspector; publication of milk reports with bacterial count, sediment, etc.; an agreement between dairymen and farmers by which all milk sold in the town will be produced within a radius of 10 miles and properly taken care of until it reaches the city; a summer hospital for babies; a milk depot; an organization of ten volunteer nurses to look up babies in the congested foreign district and to instruct the mothers how to care for their children; the cleaning up of streets and alleys of the congested districts, and four infant welfare stations, to be established in order to carry on the work permanently. One of the large but less populous states reports 41,000 weighed and measured with 32,000 complete physical examinations by physicians in only one half its counties, with many counties still at work.

As the result of the tabulations of remediable defects from this one campaign, seventeen permanent health centers have been established, several counties have each a public health nurse, and lately the state has established a Division of Child Hygiene under the state board of health. In another more populous state, most competently organized, every county in the state but four (102 in all) has had child welfare chairmen, with 360,000 children weighed and measured. The states have varied widely in their child welfare campaign undertakings, but there is not a state in the Union which has not had some part in the Children's Year weighing and measuring program. Publicity by means of posters, dodgers, stickers, slides, and motion picture films of Children's Year has been widespread throughout the country largely depending for success on the activity and ingenuity of local chairmen. An interesting innovation in propaganda has developed in the portable welfare center and dental clinic. Michigan has a "Children's Year Special," an interurban car which was sent out on a six weeks' trip with a trained nurse in charge. Local committees and local physicians cooperate in each town. The expense of the car is donated by the railroad company.

**Health Officer and Enforcement of the Law.**—The enactment of comprehensive state legislation on the following lines is advocated by Craster: (1) A state health service similar to the U. S. Public Health Service. (2) The payment by the state of part of the health officers' salaries. (3) A state poor relief or old age pension plan. (4) State insurance against tuberculosis disability. (5) State control of tuberculosis sanatoria with the establishment of state preventoria for children. (6) A milk ordinance for the state. (7) A plumbing code for the state. (8) State control of animals slaughtered for food on farms.

## Archives of Ophthalmology, New York

May, 1919, **68**, No. 3

Eye Work with British Expeditionary Forces in France. G. S. Derby, Boston.—p. 217.
Reparative Surgery of Eyes After War Injuries. G. H. Grout, New York.—p. 227.
Case of Acute Retrobulbar Neuritis in a Baby. T. H. Butler, Birmingham, Eng.—p. 240.
Tuberculin in Diagnosis and Treatment of Eye Diseases. E. Torok, New York.—p. 242.
Substitute Operations for Excision of Eyeball. I. Implantation of Metal Ball in Tenon's Capsule. W. M. Sweet, Philadelphia.—p. 257.
Id.—II. Fat Transplantation Into Tenon's Capsule after Enucleation. A. N. Alling, New Haven.—p. 263.
Id.—III. Implantation of Glass Ball Within Tenon's Capsule by Verhoeff's Method. H. J. Howard, Mineola.—p. 265.
Id.—IV. From the Standpoint of the Artificial Eye Maker. P. Gougelmann, New York.—p. 268.
Case of Keratitis Profunda in Both Eyes Following Inoculation with Antityphoid Vaccine. G. H. Bell, New York.—p. 273.
Experimental Production of Panophthalmia by Infection from Blood Stream. P. Wegeforth, U. S. Army.—p. 276.

## Annals of Surgery, Philadelphia

April, 1919, **69**, No. 4

*Bone Tumors. Central (Medullary) Giant-Cell Tumor (Sarcoma) of Lower End of Ulna. J. C. Bloodgood, Baltimore.—p. 345.
*Osteogenesis. L. Mayer, New York.—p. 360.
*Effacement of Cavities in Treatment of Fractures. G. Dehelly and G. Loewy, France.—p. 367.
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Treatment of Streptococcus Septicemia Complicated by Wound Diphtheria, Making Use of Transfusion of Blood Immune to the Streptococcus. C. S. Vivian, Humboldt, Ariz.—p. 437.
Double-Eyed Aneurism Needle. A. L. Soresi, New York.—p. 440.

**Central Giant-Cell Sarcoma of Lower End of Ulna.**—A recent observation made by Bloodgood of this type of tumor involving the lower end of the ulna in which the bony shell was completely destroyed led him to reinvestigate forty-seven cases of giant-cell tumor with especial reference to destruction of the bony shell or its perforation with infiltration of the surrounding soft parts. This study demonstrated that the complete destruction of the bony shell or its perforation at one or more spots with infiltration of the giant-cell tumor tissue has not been associated with any difference in malignancy. There have been no deaths from metastasis in these forty-seven cases. In fact, in these forty-seven cases there is not a single example of death from any cause which could be attributed to the tumor. In many instances the local growth of the sarcoma which has caused death by metastasis, had been just as circumscribed and, in

some instances, more circumscribed, than the local growth of the gant-cell tumor. The size of the local growth which produced death by metastasis is not necessarily large. It is, therefore, of the utmost importance, especially in relation to bone tumors, to be able to recognize the giant-cell tumor, because when it is recognized a cure should be accomplished with little or no mutilation beyond that due to the destruction of tissue by the tumor itself. It is important to recognize the central giant-cell tumor at the exploratory incision, and when it is recognized and its benignity accepted, Bloodgood is convinced that more cases will be subjected to curetting and resection will only be done when made necessary by the complete absence of the bony shell, or when resection will leave the limb with equally good function.

**Osteogenesis.**—Study of two specimens recovered at necropsy, together with extensive animal experimentation, has convinced Mayer that the fully developed bone cell has no power of division and that bone growth results from the activity of cells lying between the bone and the outer layer of the periosteum. Experiments prove that when these cells are removed the bone itself is not capable of reproducing them, but that the periosteum has that power. In transplantations, the bone graft acts partly as a scaffolding for the ingrowth of osteogenetic cells, but it contributes also to its own life, first by the persistence of some of its bone cells, second by the activity of the transplanted periosteum. The graft grows in its new situation and becomes modified in its form according to the changed mechanical conditions (Wolff's law).

**Effacement of Cavities in Treatment of Fractures.**—The authors emphasize the importance of obliteratng all so-called "dead" spaces which may form after improper treatment of fractures. They remove sufficient bone so that the soft tissues fill in any cavity formed. Thus there is little danger of infection occurring later. They illustrate by citing cases. The Hemequin apparatus is always used by them in these cases and with good results.

**Synthetic Transplantation of Tissues to Form New Finger.**—In cases in which severe laceration of the hand by high explosive shells and shrapnel necessitated the immediate amputation of the four fingers with all, or the greater part, of the adjoining metacarpal bone, Albee suggests constructing an entirely new digit by means of synthetic transplantation of tissues. The procedure was carried out successfully in two cases. This "finger" has provided in each instance the necessary opposition to the thumb, transforming the hitherto helpless stumps into useful members. The operation was done in two stages. First, a rectangular flap of skin and subcutaneous tissue was turned up from the chest wall and sutured into the form of a finger. Its end was approximated to the edges of an incision in the stump of the hand made over and down to the distal surface of the os magnum, by the Italian plastic method. A pedicle was left attached to the chest wall to supply nourishment to the newly implanted parts until circulation with the hand should be established thoroughly. In the second step, the boneless finger, cut loose from the chest wall, was first tunneled by means of a scalpel and a wedge-shaped mortise was made in the distal-radial surface of the os magnum with an osteotome. Into this mortise a wedge-ended tibial graft, 3 inches long and about ⅜ inch wide, was firmly driven. A sliver graft was affixed along the ulnar side of graft No. 1, for purposes of "bone-seed," or increased osteogenesis. The skin was closed with interrupted silk sutures. The result was excellent. The patient was able to use this new finger for holding a pencil, knife, fork, pulling on his shoes, etc.

**Experimental Cranioplasty.**—Wegeforth is of the opinion that the logical material to use in cranioplasty consists of plates of cranial bone, for (1) the requirements of protection for the brain and restoration of the shape of the head can be accomplished immediately; (2) the formation of cartilage, with possible resulting exostoses, is avoided. Animal experimentation (on cats) indicates that either living or dead grafts may be used effectively in the head. In man, living grafts are recommended, but if they are not available, plates of sterilized cranial bone are preferred to any other tissue.

**Hypertonic Gum Acacia and Glucose in Treatment of Secondary Traumatic Shock.**—On the basis of animal experiments made by Erlanger and his collaborators and others on the mechanism and treatment of shock, they conclude that slowing of the circulation in a considerable part of the body, or in the whole body, is commonly, if not always, the factor that leads to the development of experimental shock. It is believed that as a result of the slowing of the blood stream the corpuscles clump in the venules and capillaries which then become choked with solid masses of corpuscles and dilate. The blood flow is thus curtailed still further, in fact to the point of interfering seriously with the processes of tissue respiration and nutrition. The effective blood volume is reduced, not alone by the dilatation, but also by transudation of plasma. The organism strives to combat this real and effective reduction in blood volume by the usual mechanism of pouring tissue fluids into the blood stream. Largely, if not exclusively, as a result of the deficient general circulation resulting from the reduction in effective blood volume, the medullary centers, including the vasomotor centers, and the heart, eventually may show some signs of functional insufficiency.

The administration of a combination of hypertonic gum acacia and hypertonic glucose under these circumstances acts beneficially, in several ways: (a) By drawing fluids from the tissues into the blood stream, thus assisting the normal mechanism in restoring the blood volume. (b) By maintaining this increased volume through some property of the gum acacia. (c) By dilating the arterioles through some specific action of the hypertonic crystalloid. (d) By increasing the energy of the heart beat in the same way, and also through direct action of the glucose on the muscle. (e) By augmenting metabolism through the increase in the supply of glucose to the organism between the limits of basal metabolism and self regulation. There is no need of providing salts with this injection, because the solution is given in relatively small quantity (5 c.c. per kilogram of body weight) and very slowly. The withdrawal of water from the tissues seems to do no harm, probably because of the large supply available, and the loss that does occur can and should be made good by the administration of water by mouth, by rectum, and hypodermically. The results obtained through the use of the solution in the treatment of shock-like states in man (twelve cases) and after hemorrhage, show conclusively that the solution is innocuous and they are strongly suggestive, to say the least, of beneficial action.

**Exposure in Gallbladder Surgery.**—Masson prefers to remove the gallbladder from below upward. In order to do this well, good exposure of the gallbladder is needed. The method used by Masson is said to help in the more difficult cases to visualize the neck of the gallbladder, the cystic duct and artery, and also their relations to the common duct and the duodenum. The abdominal incision extends from the midline at the tip of the ensiform to a point about 2 inches external to the umbilicus. If it is necessary to remove the appendix the incision may be extended downward, especially if there is an excessive amount of subcutaneous tissue. The stomach, large bowel, omentum and small intestine, are separated from the field of operation by three or four abdominal sponges, held in place by the left hand of an assistant.

In almost all such cases this exposure is all that is needed, even when the right lobe of the liver cannot be rotated. In the exceptional case, however, additional exposure is obtained by inserting a pack (4 inches by 3 feet) between the posterior superior surface of the right lobe of the liver and the diaphragm. In this manner the liver is made to descend slightly, the concave visceral surface is flattened somewhat, and the hilum of the liver is made more accessible. The insertion of this pack is an easy matter and if carefully placed it can in no way injure either the liver or the diaphragm. With an ordinary abdominal retractor the second assistant retracts the right costal margin upward and outward, while with a long shoe horn retractor the first

assistant gently retracts the liver in the opposite direction. The operator is now able to place the pack in position by using a pair of 9-inch tissue forceps, carrying the gauze along the shoe horn retractor. Masson has used this procedure in numerous cholecystectomies, and is satisfied that it has frequently made very difficult cases absolutely safe.

**Long Resections of Intestine.**—In a case of ileocecal tuberculosis causing partial obstruction of the small bowel, Cannaday resected 300 cm. (10 feet) of the small bowel as well as the cecum and 20 cm. (8 inches) of the ascending colon. A lateral anastomosis was made to the transverse colon. The patient made an uneventful recovery. Cannaday publishes an excellent summary of reported cases of long resection of the intestine.

**Transplantation of Vermiform Appendix into Female Bladder to Supply Absent Urethra.**—In this case, Rosser made a free transplant of the appendix within a prepared tunnel extending from slightly within the neck of the bladder to a point near the clitoris where the normal meatus had been before its destruction. The urethra had been removed five years previously for supposed malignant tumor. The operation planned and executed consisted of incisions through the mucosa, one below the clitoris, and the other at the bladder exit between which a tunnel behind the anterior vaginal vault was made with suitable forceps. The mucosa was dissected from the inside neck of the bladder for a distance of about three-fourths inch. Splitting the mucous membrane over the neck of the bladder longitudinally uncovered the remaining portion of its sphincter so that it could later be narrowed. These preparatory steps taken, the patient's normal appendix was removed together with its mesentery and quickly placed in warm saline solution. While held emersed in this the tip was cut off, its lumen sterilized by the injection of 50 per cent. alcohol, and a small-sized catheter passed through it. The meso-appendix was then clipped and several linear incisions made through the peritoneal coat. So prepared, the catheter with the transplant was inserted through the tunnel well into the bladder, the distal end of the appendix entering the freshened bladder neck about one-half inch, where it was sutured as was the tunnel mouth to the bladder with fine catgut. The proximal end of the appendix projected a half inch out of the upper end of the tunnel. This made a meatus possible by splitting and sewing the flaps back on either side to a denuded surface. Care was taken to restore sphincter action by suturing such neglected fibers as could be found, and the juncture line was reinforced by pedunculated flaps dissected for that purpose. The patient left the hospital in ten days. The bladder behavior was normal, control being perfect, the capacity which had been greatly lessened by the five years of incontinence gradually expanded, and the transplanted appendix accustomed itself to its new surroundings, furnishing what promises to be a permanent and satisfactory urinary canal.

## Boston Medical and Surgical Journal

May 8, 1919, **180**, No. 19

*Southard's Order of Exclusion in Psychiatric Diagnosis. L. G. Lowrey, Boston.—p. 515.
Changing Methods and Advances in Treatment of Progressive Deafness Following Chronic Catarrhal Otitis Media. F. P. Emerson, Boston.—p. 519.
*David Livingstone and the Transmission of Disease by Insects. E. W. Gudger, Greensboro, N. C.—p. 523.
Physical Fitness for Overseas Service. J. F. Martin, Garden City, N. Y.—p. 527.
Pneumothorax Treatment of Pulmonary Tuberculosis. H. F. Gammons, Carlsbad, Tex.—p. 528.
*Fat Embolism Shock is Not Explained by Embolism of Lungs. W. T. Porter, Boston.—p. 531.

**Southard's Order of Exclusion in Psychiatric Diagnosis.**—Lowrey takes exception to Southard's order of exclusion so far as groups 5 and 6 are concerned. He would transpose this order because, he says, these groups clearly shade into one another on grounds of etiology and symptom similarity. Hence, they should be in sequence. Possibly on the ground of therapeutic possibility, the somatic diseases should be placed first. This, however, is not quite clear. However, on basic importance, the somatic diseases need first to be excluded. Many somatic diseases also involve the brain directly instead of secondarily through the medium of toxins, however elaborated. Hence, there is need to determine the presence or absence of somatic disease in cases which seem to be problems of brain disease. But it is particularly from the standpoint of symptom similarity that Lowrey urges the change in order.

**David Livingstone and the Transmission of Disease by Insects.**—Gudger claims that in 1850 Livingstone wrote a complete description of the tsetse fly (*Glossina morsitans*) and its relation to disease. He quotes freely from Livingstone's publication.

**Fat Embolism Shock Is Not Explained by Embolism of Lungs.**—That fat embolism shock cannot be explained by embolism of the lungs Porter says may be proved by two methods. The first of these methods produces shock by injections through the central end of the carotid artery. If 1 c.c. of neutral olive oil is injected into the central end of one carotid in a cat weighing 4 or 5 kg. (both vertebrals and the other carotid artery being free), shock rarely follows. Obviously, the oil enters parts of the brain anterior to the bulb and does not plug the vessels in the vasomotor region. If, on the contrary, a clamp be placed temporarily (four minutes) on one carotid while the oil is passing through the other carotid, shock usually does follow. Like the injection of oil into the vertebral artery, this experiment is doubly destructive against the hypothesis that shock is due to embolism of the lungs; for it leaves the lungs free and produces shock by the embolism of a particular region of the brain. The second of the two methods compares two procedures, A and B, in each of which 0.5 c.c. of neutral olive oil per kilogram of body weight is injected into the external jugular vein of cats. The rate of inflow is about 1 c.c. in fifteen seconds. In series A both carotid arteries were closed but both vertebral arteries were free. Shock usually took place. In series B both carotid arteries were free but both vertebral arteries were closed. Shock seldom took place. Yet the lungs were infarcted equally in both series. The experiments point clearly to embolism of the vasomotor region as the cause of the shock observed in series A, in which the vertebral arteries were open.

## Bulletin of Johns Hopkins Hospital, Baltimore

May, 1919, **30**, No. 339

*Effect of Diet on Healing of Wounds. A. H. Clark, Baltimore.—p. 117.
*Relation of Spontaneous Nephritis of Rabbits to Experimental Lesions. A. L. Bloomfield.—p. 121.
*Effect of Different Bloods on the Growth of B. Influenzae. T. M. Rivers, Baltimore.—p. 129
*Clinical Pharmacology of Digitalis. A. M. Wedd, Pittsburgh.—p. 131.

**Effect of Diet on Healing of Wounds.**—According to Clark, no previous work on the effect of specific diets on wound healing has been reported. Twelve dogs as nearly the same age, size and general condition as possible were placed into four groups of three dogs each. Each group was put on a special diet: (1) Mixed diet; (2) carbohydrate diet; (3) protein diet; (4) fat diet. The dogs were fed on these diets for three days before the wounds were made. Preliminary experiments with various types of dressings showed that the wounds healed better and showed less tendency to infection when left entirely open with no dressing of any kind. The wounds were placed where the dog could not lick them and were left open. As soon as they were made, the size of the wounds was traced on a piece of transparent celluloid with a wax pencil and similar tracings were made at intervals of three or four days throughout the experiment. These areas were copied on heavy tracing paper and measured in square centimeters by means of an Amsler polar planimeter. A second set of wounds was made after the first had healed and finally a third set in which the dogs were interchanged in diets. The diet seems to affect the length of the quiescent period. The protein-fed dogs have no quiescent period, the contraction beginning at once. The carbohydrate-fed dogs have a quiescent period of three days, those on the mixed diet, of four days, and the fat-fed dogs, of six days. After the sixth day the curves run parallel and

the dates of final healing differ by the same amount as the lengths of the respective quiescent periods. The diet, therefore, is a factor in determining the date of the beginning of Period II, the period of granulous contraction. The formation of the epithelium, Period III, starts on the same day, irrespective of the diet and the size of the wound. Diet has no effect on either the date of beginning of Period III or the course of epidermization. The difference between the two curves gives the area of the epithelium. After the wound is healed the scar continues to contract until pigmentation sets in. During this latter process it enlarges and reaches a stationary state after pigmentation is complete.

**Relation of Spontaneous Nephritis to Experimental Lesions.**—An attempt was made by Bloomfield to produce chronic nephritis in rabbits by intravenous injections of streptococci, following a direct injection into the renal artery. Failure to produce chronic glomerular lesions was thought to be due to the means used by the kidney to dispose of injected organisms, which resulted in complete healing if the glomerulus survived the acute injury. Chronic focal lesions were found in many animals. Control examinations of the kidney at the beginning of the experiment, and comparison of differently treated right and left kidneys suggest that all these lesions represented the "spontaneous nephritis of rabbits."

**Effect of Different Bloods on Growth of Influenza Bacillus.**—In making routine throat cultures, Rivers noticed that on certain days the colonies of *B. influenzae* were large and easy to isolate, whereas on other days they were very small and often overlooked. The results from day to day differed so much that an explanation was sought. It was found that on the days when the colonies were large either cat or rabbit blood had been used and human blood when they were small or overlooked.

**Clinical Pharmacology of Digitalis.**—Wedd's communication is compiled from data on unselected cardiac and cardiorenal hospital patients to whom digitalis was given, including twenty-nine in whose cases electrocardiographic records were taken every twenty-four hours, or more frequently, during the period of administration of a standardized preparation of the drug. It was soon apparent that successive tinctures supplied to the hospital wards showed marked variation in their efficiency. Two biologically standardized tinctures of approximately theoretical strength were studied and it appeared that the inefficiency of one was due to failure of prompt absorption from the alimentary canal, as was indicated by the larger amount necessary to produce a change in the T wave, the earliest demonstrable digitalis effect. Daily doses averaging 10 c.c. were given and continued until alimentary disturbances or abnormalities in the cardiac mechanism appeared. In no case was there any ill effect attributable to digitalis and there were no evidences of the so-called cumulative action. The toxic dosage showed marked individual variation, from 20 to 100 c.c. The earliest signs of toxicity were slight nausea and premature beats. It is believed to be a perfectly safe procedure and one which will promptly bring about the expected benefits of digitalis to begin with an initial dose of 5 c.c. of tincture and to continue with 8 or 10 c.c. daily until signs of toxicity appear or until clinical improvement warrants discontinuing the drug. In the series studied were cases with all possible valvular defects, all grades of decompensation, renal lesions of varying degrees of severity, systolic blood pressures ranging from 90 to 230 mm. and almost all of the recognized types of myocardial involvement, including cases of intraventricular block and complete dissociation, and there was not found any clinical entity which might be said to constitute a contraindication to the use of digitalis.

## Canadian Medical Association Journal, Toronto

May, 1919, **9**, No. 5

Recent Work on Chemistry of Blood and Urine. W. Boyd, Winnipeg.—p. 385.
Influence of War on Surgery, Civil and Military. G. E. Armstrong, Montreal.—p. 396.
Exophthalmic Goiter. J. K. McGregor, Hamilton.—p. 406.
Actinomycosis; Case Reports. A. I. McCalla, Calgary.—p. 411.
Clinical Analysis of Recent Epidemic of Pneumonia. G. S. Young, Toronto.—p. 421.
Terminology of Military Reports. J. A. Hislop, Edmonton.—p. 427
Induction of Labor. F. W. Gershaw, Medicine Hat.—p. 430.
*Diphtheroid Infection of Wounds:—Frequency of Diphtheroid Bacilli in Urethritis and Prostatitis. R. M. Janes and N. O. Thomas, Buxton, Eng.—p. 434.

**Diphtheroid Bacilli in Urethritis and Prostatitis.**—One hundred and twenty-nine wounds were examined bacteriologically (swabs) by Janes and Thomas. Eighty-two, or 63.5 per cent., showed diphtheroid organisms. Of these, thirty were isolated in pure culture at intervals during a period of four months. Three of these proved to be true Klebs-Loeffler bacilli and twenty-seven were wound diphtheroids, that is, 10 per cent. of the isolated organisms were *B. diphtheriae*. Assuming that this is a fair proportion, then 6.4 per cent. of the wounds were infected with *B. diphtheriae*. Clinically, it is impossible to diagnose between diphtheroid and true diphtherial infection of wounds. A membrane does not necessarily indicate the presence of *B. diphtheriae* wounds. It is not possible to distinguish between diphtheria bacilli and wound diphtheroids by morphologic characters. Only by sugar reactions obtained from pure cultures can diphtheroid organisms be distinguished from true Klebs-Loeffler and only after positive animal inoculation is it advisable to diagnose diphtheria in wounds. Flavine appears to have given better results than any other form of local treatment used. The authors believe that it is advisable to administer diphtheria antitoxin in cases of diphtheria in wounds. The importance of giving a sensitizing dose in cases of war wounds due to their having received previous injections of serum is emphasized, on the basis that if this rule is not followed severe anaphylactic reactions will occur in some cases.

## Journal of Orthopedic Surgery, Boston

May 19, **1**, No. 5

*Some Interesting Back Cases. L. T. Swaim, Boston.—p. 249.
Reconstruction Hospital on Parker Hill. F. C. Cotton, Boston.—p. 256.
*Diagnosis of Syphilis of Bones and Joints. J. O. Wallace, Pittsburgh.—p. 258.
Clonic Spasmodic Contractions, Illustrated by Case of Clonic Spasmodic Contraction of Muscles Around Hip Joint. E. L. Evans, London, Eng.—p. 295.
*Mensurgraph: Method of Measuring and Plotting Orthopedic Deformities by Photography. T. W. Kilmer, New York.—p. 297.
Metacarpal and Phalangeal Traction Splint. H. L. Hess, Kansas City, Mo.—p. 302.
Gunshot Injuries to Joints. R. B. Osgood, Boston.—p. 305.

**Rotation of Sacro-Iliac Joint.**—Swaim reports a series of cases in support of the theory that rotation of the sacro-iliac joint may occur.

**Syphilis of Bones and Joints.**—The differential points in the diagnosis of syphilis of bone and joint conditions are discussed by Wallace. He says that in all suspected cases of syphilis of bones and joints, it is essential to go into the family and personal history of the patient in minute detail, bringing out a complete history of the parents as to chronic rheumatism, various eye troubles, chronic bone suppurations, miscarriages, sterility, etc., as well as the definite history of the primary infection in either parent. In the personal history of the patient, in congenital syphilis, one should look for such symptoms as rhinitis, lesions of the skin and mucous membranes, iritis, suppurating lesions of hands or feet and malnutrition. In a negative history one must not overlook the fact that in any suspected case a Wassermann test should be made. In about 15 per cent. of Wallace's cases the condition followed a definite history of trauma. In 50 per cent. of the cases of acquired syphilis osteocopic pain was present in a very severe form; in 19 per cent. of the congenital cases there was no osteocopic pain present, although there was extensive involvement of the bone. Pain was present in every case except one, but it was insignificant in proportion to the pathology present. Swelling was present in 50 per cent. of cases. In 70 per cent. of the cases tenderness was elicited, and of the ten cases not showing tenderness, five were cases of spinal syphilis or Charcot spine. Redness and local increase of temperature were present in only ten cases. Fluctuation was comparatively a rare sign, being present in only 9 per cent. of cases. In twenty-seven cases in which

there were joint symptoms, 50 per cent. had limitation of motion. One case showed a characteristic kyphosis with no other local physical signs, although the roentgenogram showed destruction of two dorsal vertebrae. In another case with no deformity, showing no local physical signs, evidence of bone destruction with new deposits of bone was seen in the roentgenogram. In a series of thirty-eight cases, a positive Wassermann was obtained in twenty-four; two doubtful, eight negative—one negative case giving a positive syphilis test. Out of the thirty-eight cases, thirty-five were treated, the treatment consisting either of the administration of arsphenamin or of inunction of mercury and protoidid by mouth or mercury salicylate hypodermically. Marked improvement was obtained in twenty-four cases, five of this number having given a negative Wassermann; slight improvement was present in six cases, one of which gave a negative Wassermann and five a positive Wassermann. Wallace considers the roentgenogram the most valuable factor in the diagnosis of syphilis of bone and joints and in differentiating it from other conditions.

**Mensurgraph: Measuring and Plotting Orthopedic Deformities.**—The method described by Kilmer consists in using the photographic camera as an instrument of precision the same as a surveyor uses the transit.

## Missouri Medical Association Journal, St. Louis

May, 1919, **16**, No. 5

*Myxedema and Hypothyroidism: Report of Cases. G. Dock, St. Louis.—p. 145.
*Sub-Deltoid Bursitis and Stiff and Painful Shoulder. A. O'Reilly; F. H. Ewerhardt, St. Louis.—p. 149.
Case of Hemolytic Streptococcus Infection of Blood with Recovery. G. D. McCoy, St. Louis.—p. 154.
Preparation of Neutral Solution of Chlorinated Soda (Dakin) by Electrolysis of Sodium Chlorid, Liquid Chlorin, and Bleaching Powder. J. G. Montgomery, Kansas City.—p. 156.
Reminiscences of Service in Division of Psychology, U. S. Army. M. A. Bliss, St. Louis.—p. 161.
*Early Sign in Influenza (Epidemic Pneumonitis). D. G. Stine, Columbia, Mo.—p. 164.

**Thyroid Extract in Myxedema and Hypothyroidism.**—In the treatment of these cases Dock begins with a small dose of thyroid extract, about 1 grain, t. i. d., increases it rapidly until physiologic effects appear, and then reduces the dose until a desired condition has been reached. He advises that the dangers and precautions in such treatment be kept in mind.

**Subdeltoid Bursitis.**—This paper is based on seventy-five cases. A careful analysis was made by O'Reilly and Ewerhardt in fifty cases. There were twenty-three males; of these, seventeen had involvement of the right shoulder, four of which were the result of trauma. In six, the involvement was in the left shoulder, and of these, two were the result of trauma. There were twenty-six females, showing involvement of the right shoulder in fourteen cases with seven due to trauma. In the left shoulder there were twelve cases, with only three due to trauma. Sixteen cases in fifty gave a direct history of trauma. The great majority of the cases in the men, not the result of direct violence, involved the right arm, which is subject to the hardest use. There were thirteen cases of gradual onset in the right shoulder and only four in the left. In the women the distribution is more interesting. In the right shoulder seven were of insidious onset, while in the left there were nine cases. This would suggest that the left shoulder is more vulnerable in women. Of seven cases in the right shoulder, there were two laundresses, one nurse, one "cap shop," and one cleaning woman. All of these occupations would mean a more active use of the right arm. Practically all the housewives had bursitis in the left arm. It may be that housewives have some especial type of work that tends to traumatize the left arm, possibly sweeping. As for treatment, uniformly good results were obtained by means of massage, heat and proper manipulations.

**Early Sign in Influenza (Epidemic Pneumonitis).**—On examining the records of 300 cases of influenza in which the first symptoms of the disease had developed within twenty-four hours of admission and in which there were no physical signs of consolidation, a sign was recorded so often that Stine regards it as being diagnostic of beginning influenza. In 83 per cent. of the cases, there was a description of "cog-wheel inspiration," or "harsh inspiratory puff," in the record of their entrance examination. These terms were used to describe a physical sign met with on auscultation of the chest. On listening to the breath sounds over the chest, the examiner heard in the lower left back, left axilla, left apex, right apex or right back (mentioned in the order of their frequency), an inspiratory sound more intense and harsh than over the rest of the chest and either broken into "cogs" (a series of inspiratory puffs) filling all the inspiratory phase, or the inspiratory sound was more intense and harsh than over the rest of the chest, but filling only part of inspiration and resembling a single harsh, short puff. The expiratory sound is absent. Stine looks on the presence of this sign as important in diagnosing influenza. It can be differentiated from the harsh breathing that precedes bronchial breathing over a beginning consolidation, by the absence of the expiratory sound. In bronchial breathing the blowing tubular sound appears first during expiration and as the sounds become more intense and harsh, inspiration and expiration are made up of two sounds of about equal intensity and length with a pause between.

## Modern Hospital, Chicago

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Ross Pavilion of Royal Victoria Hospital, Montreal. E. F. Stevens, Boston; H. E. Webster, Montreal.—p. 311.
Impressions of Desolated Belgium. René Sand, University of Brussels.—p. 316.
Rôle of the Intern in Standardization of Hospitals. W. C. Allen, Chicago.—p. 318.
Canning and Gardening for Mentally Sick. J. C. Clark, Sykesville, Md.—p. 320.
Rehabilitation Through Systematic Exercise. A. F. Gugel, Lakewood, N. J.—p. 322.
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Convalescent Hospital in War Service. F. Brush, New York.—p. 326.
Importance of Dental Service in Hospital. A. A. Crocker, Cincinnati.—p. 328.
Medical Asepsis in French and English Hospitals. D. L. Richardson, Providence.—p. 330.
Hospital Accounting. C. A. Porter and H. K. Carter, Chicago.—p. 335.
Greater Community Association at Creston, Iowa. A. E. Kepford, Des Moines.—p. 342.
Little Journeys to Places "Over There." M. J. Robinson, Paris.—p. 348.

## New Jersey State Medical Journal, Orange

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Some Problems of Industrial Surgeon. C. W. Banks, East Orange, N. J.—p. 149.
Treatment of Acute Inflammation of Upper Respiratory Tract. M. F. Butler, Philadelphia.—p. 153.
Treatment of Uterine Hemorrhages from Modern Viewpoint. H. A. Kelly, Baltimore.—p. 157.
Two Cases of Influenza Treated by Sodium Bicarbonate Intravenously. L. S. Madden, Pleasantville, N. J.—p. 162.

## New York Medical Journal, New York City

May 10, 1919, **109**, No. 19

Spring Hay Fever: Its Cause, Prevention and Treatment. W. Scheppegrell, New Orleans.—p. 793.
Direct Visual Method in Treatment of Filiform Strictures of the Urethra. L. Buerger, New York.—p. 798.
Conservation in Management of Trauma and Diseases of Testes. G. F. Lydston, Chicago.—p. 800.
What is Neuritis and How Should it be Treated. W. Martin, Atlantic City.—p. 801.
Meningitis. H. I. Goldstein, Camden.—p. 803.
Syphilis of Stomach. Report of Case. M. F. Morris, Jr., Atlanta.—p. 807.
Case of Brain Abscess. Operation and Recovery. W. C. Bowers, New York.—p. 809.
Pathology and Clinical Forms of Cerebral Abscess. C. G. Cumston, Geneva, Switzerland.—p. 810.

## South Carolina Medical Association Journal, Greenville

April, 1919, **15**, No. 4

Pathologic Anatomy and Bacteriologic Findings in Thirty-one Necropsies During Recent Epidemic of Influenza. J. W. Smith, Charleston, S. C.—p. 414.
Psychoses Following Influenza. J. F. Munnerlyn, Columbia, S. C.—p. 417.

## Southern Medical Journal, Birmingham, Ala.

April, 1919, **12**, No. 4

Paleopathology. R. L. Moodie, Chicago.—p. 182.
Diagnosis and Management of a Severe Case of Intestinal Toxemia. M. H. Smith, Jacksonville, Fla.—p. 184.
Case of Myxedema: Use of Thyroid Extract. M. B. Allen, Atlanta.—p. 185.
*Studies on Malaria Control. III. Prevalence of Malaria and Its Control by Treating Malaria Carriers. C. C. Bass, New Orleans.—p. 190.
Certain Fundamental Principles of Military Surgery and Their Application to Civil Surgery. W. E. Lower, Cleveland.—p. 194.
*Duodenal Fistula; Case Report. G. A. Hendon, Louisville.—p. 199.
Important Factors in the Postoperative Care of Complications Following Abdominal Surgery. A. W. Ralls, Gadsden, Ala.—p. 203.
Differential Diagnosis of Ureteral Stricture. L. F. Turlington, Birmingham, Ala.—p. 205.
Ophthalmic Practice of Today and its Bearing on Undergraduate Ophthalmic Teaching. H. Woods, Baltimore.—p. 213.
Eustachian Irrigation in Certain Mastoid Operations. J. W. Jervey, Greenville, S. C.—p. 218.

**Control of Malaria by Treating Malaria Carriers.**—This is one of a series of papers, based largely or entirely on malaria control work conducted jointly by the International Health Board and the Mississippi State Board of Health, in a locality of great prevalence in the Mississippi delta. Experimental control of malaria by treating malaria carriers in Bolivar County, including all methods experimented with and all groups of people, was followed by a reduction of 35.52 per cent., the best for any subdivision being 83.82 per cent. reduction. In Sunflower County, during 1918, in an area of 100 square miles, having a population of over 8,000, the reports of the physicians of the area indicated a reduction of 88.82 per cent. In a subdivision of the area, 440 persons were resurveyed just one year from the date on which they were surveyed and put on treatment. This resurvey indicates a reduction of 89.9 per cent. over the frequency of malaria attacks during the year previous to their first survey and treatment. In Bass' opinion, the conclusion seems justified, that it is practical to obtain a high degree of malaria control in localities of great prevalence in the Mississippi delta by proper treatment of malaria carriers.

**Duodenal Fistula.**—The fistula in Hendon's case had its origin in an ulcer of the duodenum which destroyed the mucous and muscular wall and produced a pinhole leak in the peritoneal covering; pain and chills and fever were the result of the escape of a few drops of duodenal contents into the surrounding tissues. Improvement of the patient after the chill was due to a temporary closure by lymph deposits over the leak, and subsequent chill and fever were the result of dislodgment of the protecting patch of lymph. This long-continued and intermittent escape of minute quantities of irritating material resulted in the formation of a defensive system of protective adhesions. The discharges were controlled by plugging the opening in the intestine with gauze saturated with compound tincture of benzoin. The fistula closed itself after five weeks.

## Southwestern Medicine, El Paso, Texas

April, 1919, **2**, No. 16

Head Injuries from View Point of Psychiatry. M. L. Neff, Phoenix.—p. 1.
An Institution's View of Shortage in Nursing Profession. Sister Walburga, Hotel Dieu.—p. 4.
Some Causes of Misunderstandings between Doctors and Nurses. J. E. S. McDonald, R. N.—p. 8.
The Nurse in the Hospital. J. B. Douner.—p. 9.
Private Nursing in Hospital. M. M. Billingsley, Baltimore.—p. 10.
Private Duty Nurse in Home. M. C. Kirskie.—p. 12.

## Tennessee State Medical Association Journal, Nashville

April, 1919, **11**, No. 12.

Better Diagnosis and Better Case Records. R. McKinney, Memphis,—p. 433.
Functions of State Board of Health. R. C. Derivaux, New Orleans.—p. 436.
Surgery of Gall Bladder and Biliary Ducts. J. B. Haskins, Chattanooga.—p. 439.
*Use of Influenza Vaccine as Prophylactic: Experimental Study Conducted by Massachusetts State Department of Health. W. A. Hinton, Boston, and E. S. Kane, Monson, Mass.—p. 442.

**Use of Influenza Vaccine as a Prophylactic.**—An experimental study was conducted by the Massachusetts State Department of Health to show the necessity of properly controlled experiments to determine the value of a prophylactic remedy during an epidemic. A report of this work is made by Hinton and Kane. The vaccine used consisted of two strains of influenza bacilli, obtained during the present epidemic, one strain being recovered at necropsy and the other from the nose of an infected patient. These organisms were grown on blood agar for from sixteen to twenty hours, suspended in salt solution and heated to 55 C. for twenty minutes. One cubic centimeter of the vaccine contained approximately 800 million organisms. The vaccine was given intramuscularly, at twenty-four hour intervals, into the deltoid and triceps muscles. The injections were 0.5 c.c. on the first day, 1 c.c. on the second day and 1.5 c.c. on the third day. Children under 12 years of age were given one half these quantities. The results obtained were entirely negative. The work was done in an institution in which influenza had not yet made its appearance, the Monson State Hospital for Epileptics, representing a small colony of individuals ideally suited for the purposes of this experiment. Approximately half of the patients were vaccinated, and as far as possible this was done by vaccinating a patient in every other bed of a ward or room. Careful records were kept on 225 patients aged from 4 to 70 years, as to the local and constitutional reactions of the vaccine. No reaction was noted in 184; twenty-six had headache and vertigo; fifteen had cough and coryza. In addition to the forty-one patients who gave reaction, eight gave severe reactions with all of these symptoms. In spite of the fact that the number of injections and the quantity of each injection was the same for each vaccinated individual in this institution, constitutional symptoms were relatively no more frequent in the young than in the older patients. Forty-one patients showed mild constitutional symptoms of influenza, consisting of rise in temperature or nausea or vomiting or coryza or headache. The duration of symptoms was for twenty-four hours or less. The constitutional reaction almost invariably occurred within an hour or so after the second injection. Among the tuberculous patients, the constitutional effects of the vaccine, as far as could be noted, differed in no way from those without this pulmonary complication. In tabulating the results of the epidemic, it was noted that some of the patients having the severest reactions from the vaccination developed influenza, although the interval was from four to thirty-six days after receiving the vaccine. Therefore, the reaction from vaccination did not indicate the susceptibility of the individual to infection, neither did vaccination have any demonstrable effect on the course of the disease. Although the patients consisted almost entirely of epileptics, influenza seemed to have no effect on the number of seizures of infected individuals. In addition to the experimental study carried on in Monson State Hospital, the same influenza vaccine was used for prophylaxis in other state institutions. For one reason or another, no conclusive proof as to value of the vaccine as a prophylactic could be obtained in any of them.

## Texas State Journal of Medicine, Fort Worth

May, 1919, **15**, No. 1

Radical Cure of Inguinal Hernia. A. C. Scott, Temple, Tex.—p. 5.
Bromid Eruption: Erythema Multiforme. J. B. Shelmire, Dallas.—p. 7.

## United States Naval Medical Bulletin

### Supplement for the Hospital Corps

April, 1919, No. 9

Recollections of duty in South Seas. L. C. Sims, U. S. Navy.—p. 7.
Geographical Distribution of Malaria and Yellow Fever. C. Fox, U. S. P. H. S.—p. 15.
Entomological Survey of U. S. Naval Training Station, Norfolk, Va. J. W. Bailey, U. S. N. R. F.—p. 18.
New Naval Medical Supply Depot, Brooklyn, N. Y. R. P. Crandall, U. S. Navy.—p. 40.
Beginners in French Self-Taught. P. O. Skinner, Dartmouth College.—p. 45.
Finger Prints. J. H. Taylor, Bureau of Navigation.—p. 48.
Naval Pharmacist. G. F. Cottle, U. S. Navy.—p. 54.
Work of Naval Pharmacist. C. Schaffer, U. S. Navy.—p. 56.
Extraction of Teeth. C. A. Griffith.—p. 63.

Suggested Card Index System to Replace Present Bill Book of Medical Department. E. E. Heun, U. S. Navy.—p. 68.
Property Accountability and Stock Accounting. E. C. Eastman, U. S. Navy.—p. 72.
Tips to Hospital Corpsmen on Independent Duty. G. D. Taber, U. S. Navy.—p. 77.
Suggestions Regarding Metric System. C. W. Rodgers, U. S. N. R. F.—p. 85.
Reclamation of Surgical Gauze. O. G. Ruge, U. S. Navy.—p. 87.
Device for Saving Time of Examining Surgeon. H. Parker, F. N. R. F.—p. 89.
Biologic Products for Pharmacists. R. P. Fischelis.—p. 93.

## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

April 19, 1919, **2**, No. 3042

*Physics of the Chest. J. Barr.—p. 471.
*War Headache and its Surgical Treatment. L. B. Rawling.—p. 476.
*Influenza Among Poison Gas Workers. F. Shufflebotham.—p. 478.
Antimony in Treatment of Case of American Leishmaniasis of Skin. G. C. Low.—p. 479.
*Antimony Tartrate in Bilharziosis and Tachycardia. J. B. Christopherson.—p. 480.
*Variety and Latency of Organisms on Missiles in the Tissues. F. C. Pybus, H. J. Slade and P. C. W. Laws.—p. 481.
*Inunction of Creosote in Pneumonia and Influenza. J. E. B. Wells.—p. 481.

**Physics of the Chest.**—The physics of the chest and their relation to the diseases and injuries of the thoracic organs are discussed at length by Barr. He first speaks of the intrathoracic pressure in health, reviewing briefly various experiments and clinical work done to maintain intrathoracic pressure during operations on the chest and its contents. Then he discusses the physics of hemothorax, pleurisy, atalectasis, the lung reflexes, the treatment of pleural effusion and the use of drugs in the restoration of the function of the damaged lung. One drug—common salt—should, he says, as far as possible, be eliminated from the diet, especially in cases of serofibrinous pleurisy, on account of its high osmotic equivalent. When there is a large quantity of effused fibrin, as occurs in pneumococcal pleurisy, decalcifying agents, such as lemons, citric acid, the citrates of ammonium, potassium and sodium may be used. In Barr's opinion, it is well to reserve their use until the acute stage of the accompanying pneumonia has passed, as the lime salts are the most important drugs in the treatment of that disease. In order to hasten the solution and absorption of the effused fibrin there is no objection to the introduction of a small amount of trypsin into the pleural cavity. The injection of a few ounces of sterile liquid petrolatum, which has a lower specific gravity but a higher surface tension than the normal lubricating fluid, lessens the liability to pleural adhesions. In empyema the lung is always more or less collapsed, and in any operation the object should be to avoid any further collapse and to make the lung expand so as to drive the purulent fluid out of the chest. Pneumothorax, visceral hernia into the thoracic cavity, emphysema, asthma, bronchitis, pneumonia, influenza, laryngeal diphtheria and croup, adenoids, whooping-cough and mediastinitis are all considered in this paper.

**War Headache and Its Surgical Treatment.**—All the cases of war headache in which Rawling did a decompression operation were secondary to gunshot wounds, concussion, fractured base, etc. First of all, he found that: 1. The more severe headaches are associated with an intact skull (closed box) or with small defects. With large deficiencies headaches are less frequent. 2. Frontal and temporal injuries are more commonly accompanied by headache than injuries in the parietal, occipital and cerebellar regions. 3. Wounds near the vertex, in relation to the superior longitudinal sinus, are frequently associated with a severe type of headache. 4. The presence of foreign bodies within the skull is commonly accompanied by chronic headache, more especially when the foreign body is situated in relation to the ventricles of the brain.

In the great majority of cases the headache dated from the moment of recovery from unconsciousness, either from the injury itself or from the operation carried out for the injury. The very first thing that the patient remembers is headache, at first very severe. In many cases special note is made of that point, and in some cases lumbar puncture was carried out for its relief. Previous to transference home the pains abated somewhat, and soon after arrival reached a certain standard. It is on this standard that Rawling gages the diminution, chronicity or increase of the pains. The severity of the headache varies greatly, from mild and inconstant attacks through every degree and grade of headache to the most severe and persistent pains. Perhaps the most common type is a "cyclic" headache. In other instances the pains show little variation in degree, persisting both day and night without intermission; the patient is never free from some degree of headache, varying from "dragging," "weight," "tearing" sensations to a constant dull ache. Wherever the injury, these headaches tend to become localized to the frontal region—behind the eyes—perhaps more acute on the side injured. Often, also, reference is made to the temples. Sometimes also there is a maximum "bursting" pain over the summit of the vertex. In addition to the fact that mental or bodily exertion, noises, joltings, concerts and especially movies, all tend to start the headache or add to its severity, there appear to be two special times of headache development—in the early morning on awaking, and in the evening between tea and bedtime. Associated symptoms are slowing of the pulse rate, with but little raising of blood pressure; marked giddiness; frequent elevation of temperature, night after night; insomnia; slow cerebration; tendency to exaggeration of all reflexes; nausea is uncommon; vomiting is rare; fits, generalized, epileptiform and eye symptoms. These headaches are dependent on some general increase of intracranial pressure, and this in turn is due in the great majority of cases to excess cerebrospinal fluid (cerebral edema).

Rest, dietetics, drugs and lumbar puncture failing to give relief, Rawling urges the performance of subtemporal decompression which will almost certainly bring about relief or cure within forty-eight hours of the operation without in any way risking the patient's life and well-being. A brief summary is given of twenty cases of subtemporal decompression carried out for the relief of headache, chronic and severe, the result of gunshot wound or other injury of the head, the headache leading to total incapacitation and rendering the sufferer utterly miserable. In the majority of cases the patient requested operative measures, all other remedies having failed.

**Influenza Among Poison Gas Workers.**—The information given by Shufflebotham with regard to influenza among poison gas workers has been collected from twenty different sources in different parts of the country; it all points in the same direction—that with the exception of phosgene gas, workers engaged in the production of other poison gases have enjoyed a very high degree of immunity from influenza infection. It is agreed, on the other hand, that phosgene workers are peculiarly susceptible to influenza, and that the disease, when contracted, assumes a serious course.

**Antimony Tartrate in Bilharziosis and Tachycardia.**—Christopherson points out that the tachycardia following the intravenous injection of antimony tartrate may not be due to antimony tartrate at all, or at most only secondary to it; it may be due to a totally different cause—to other parasites, for instance—although at the same time bilharzia may be present. Therefore, Christopherson urges that the feces should always be examined for parasites while antimony treatment is on its trial.

**Variety and Latency of Organisms on Missiles in the Tissues.**—Missiles apparently sterile, or at least giving no clinical indication of infection, were examined bacteriologically by Pybus and his associates. The missiles were extracted for varying reasons, either because they were subject to pressure or caused pressure on nerves, or interfered with movement. Forty-four specimens were sent for examination; nearly 50 per cent. were sterile. Of twenty-three missiles from which cultures were obtained, the staphylococcus was present in

ten cases. Putrefactive bacilli, in six cases, were next in the order of frequency. In two cases the tetanus bacillus or organisms of that type were found. The analysis shows that shell fragments, contrary to what might be expected, are more often sterile than bullets. The length of time the missile remained in the tissues varied from one to thirty months. This examination has shown that the *Bacillus perfringens* may survive a period of seven months. In this case the bullet was removed from the tibia, where it was lying without causing any apparent lesion in the surrounding cancellous tissue. After removal no ill effects followed, and the wound healed by first intention. In a second case a fragment of shell was removed from the forearm. Streptococci and the tetanus bacillus were found. The wound suppurated, and immediately on receipt of the bacteriologic findings antitetanic serum was administered; no symptoms presented themselves.

**Inunction of Creosote in Pneumonia and Influenza.**—The axillary inunction of creosote in pneumonia and in influenza and some allied conditions is advocated by Wells. The method of administration is simple. For adults, 10 minims of pure creosote are gently rubbed into the right axilla with the finger. If necessary, which is very rarely the case, a second dose may be given, this time in the left axilla for fear of blistering. The patient must be dressed in woolen or flannel and placed between blankets so as to avoid a chill after the sweating. Only slight discomfort attends the treatment; a slight burning of the skin, which passes off in a day or two without vesication, is the only disagreeable effect. For children Wells has diluted the creosote with soap liniment, reducing the proportion of creosote according to the age of the patients. For infants, in place of the axillary inunction, he has at times substituted rubbing the neck and front of the chest with a liniment containing creosote. Practically all cases of influenza under his care have been treated by rest in bed (most of them a soldier's bed—that is, on the ground), plenty of fresh air, and the administration of creosote by the mouth. Half a minim of creosote shaken up with half an ounce of water is the simple mixture—the addition of half a minim of oil of peppermint makes it more palatable, but it is not very unpalatable without it. Very few patients treated in this way develop pneumonia. When signs of pneumonia developed the axillary inunction of creosote was nearly always followed by its abortion, or it was so modified that the patient recovered. When the pyrexia of influenza has gone, quinin or strychnin or both may be necessary.

In several cases of meningitis due to infection by *Micrococcus catarrhalis*, and one by meningococcus, the patients recovered after axillary inunction. Wells believes creosote to be particularly detrimental to the pneumococcus, the *M. catarrhalis*, and the influenza germ, and that creosote administered by axillary inunction enters the blood stream through the lymphatics, and is taken direct to the lung tissues by the pulmonary circulation, possibly taking a short cut into the blood stream by the lymphatic duct. Its diaphoretic action helps to relieve the hyperemia of the lung tissues, and thereby removes the nidus for the pneumococcus which might be formed by an exudate; its antiseptic action is brought to bear directly on any germs that may have gained access to the air spaces of the lungs.

## Japan Medical World, Tokyo

### (Nippon No Ikai)

April 13, 1919

Use of Sensitized Influenza Bacillus Vaccine in Treatment of Influenza. J. Nogata.

April 20, 1919

*Prophylactic Inoculation and Vaccine Treatment of Influenza. T Kitano.

**Vaccine in Prophylaxis and Treatment of Influenza.**—A sensitized influenza bacillus vaccine has been used by Kitano as a prophylactic and therapeutic measure in influenza with good results. For prophylactic use the vaccine contains 0.2 mg. of the bacilli in 1.0 c.c. of suspension. Among 10,300 persons who were given this treatment, only 285 (2.7 per cent.) had any untoward symptoms, such as local pain and swelling, chilliness, pyrexia—usually slight in degree, headache, anorexia, insomnia, vomiting and diarrhea. In none of these cases were the symptoms of long duration and rarely were they of any great degree of severity. The same vaccine was used for therapeutic purposes. The dose was the same. The injections were repeated at two days intervals, sometimes as often as six times, until the symptoms disappeared or began to disappear. Eighty-seven patients were treated. In forty-nine the course of the disease was uneventful; in thirty-eight pneumonia was a complication. The mortality among the former was nil; in the pneumonia group it was 5.2 per cent. In 270 cases of influenzal pneumonia treated in the usual manner, the mortality was 23 per cent. With the usual treatment the average number of sick days was 17.2, while in the vaccine treated cases the patient was never ill more than ten days, usually only seven, after the first injection of vaccine. In short, the vaccine lessens the period of illness and lowers the mortality.

## Archives des Maladies du Cœur, etc., Paris

February, 1919, **12**, No. 2

*Alternating Respiration. G. Galli.—p. 49.
Attempt to Explain the C Wave of the Jugular Pulse. E. Lenoble. —p. 56.
Roentgen Aspect of Base of Heart in Normal Conditions. E. Bordet. —p. 67.

**Alternating Respiration.**—Galli reports the case of a centenarian in excellent health and vigor whose respiration resembled the Cheyne-Stokes type, but was distinguished by a special periodicity in the alternating phases, with a crescendo and diminuendo, both in intensity and duration. The only explanation for the anomaly that seemed plausible was a periodically recurring fatigue of the respiration center.

## Bulletin de l'Académie de Médecine, Paris

March 18, 1919, **81**, No. 11

*International Scientific Relations. Resolutions Voted.—p. 297.
Alcoholism in Relation to Insanity Among Women. R. Le Clerc. —p. 304.
Endorsement of Prophylactic Calomel Salve To Be Dispensed Without Prescription.—p. 306.
Influenza in Nurslings. C. Achard.—p. 307.
Technic for Smallpox Vaccination. L. Camus.—p. 309.
Infant Welfare Work at Paris (American). A. Lesage.—p. 313.
*Vaccine Therapy of Contagious Lymphangitis in Horses. M. Belin. —p. 314.

**International Scientific Relations.**—See news item, p. 1477.

**Contagious Lymphangitis in Horses.**—Belin reports experiences with 1,500 horses presenting bacillary lymphangitis and 400 with cryptococcus lymphangitis, all treated with a pyovaccine. This treatment proved successful in about 75 to 98 per cent. of the cases. It is superior to all other procedures applied to date, he says, while not conflicting with any of them. He describes three methods for preparing the vaccine. The one he has used most is made by agitating vigorously together pus, taken from ripe abscesses, with four parts of ether. It is then set aside for twenty-four hours, agitating occasionally. Then as much boiled water is added as was used of the ether, and the pyovaccine is ready for use. In recent cases of cryptococcus lymphangitis, he injects 2 c.c. in series of seven daily injections, then waits twelve or fifteen days before the next series. With bacillary lymphangitis, he uses 3 c.c. in four daily injections, and then continues with isolated injections, one every five or six days.

April 1, 1919, **81**, No. 13

Primary Malaria in Children. P.-F. Armand-Delille.—p. 395.
*Salt-Free Diet in Epilepsy. C. Mirallié.—p. 398.
Fractures Treated in Germany. A. Bréchot and R. Massart.—p. 400.
The Fifth Cusp is of Atavistic Origin. M. Baudouin.—p. 402.

**Epilepsy.**—Mirallié has now a record of 183 epileptics treated with the usual sedative plus a salt-free diet. No benefit was apparent in 20 cases; failures are usually in homes where servants are kept. Improvement was manifest in 52 cases, with the disappearance of all seizures in 3. When he found it impossible to get bread made without salt, he had potatoes used instead of bread. The age and the duration of the epilepsy did not seem to affect the result.

This salt-free diet was kept up at least four or five years. His patients gradually came to prefer unsalted food. There was no restriction in the diet otherwise. In 60 per cent. of 161 followed to date, the seizures have not returned. In some the interval is up to twelve years.

## Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 7, 1919, **43**, No. 5

Influenza Among the Tuberculous. P.-J. Ménard.—p. 101.
Syphilids in the Axillae. Guerquin.—p. 106.
*Anachlorhydria and Apepsia. F. Ramond.—p. 106.
*The Wassermann Reaction with Chronic Splenomegaly. P.-E. Weil. —p. 111.
*The Leukocyte Balance with Cardiac Instability. C. Laubry and C. Esmein.—p. 115.
*Treatment of Acute Rebellious Dysentery. G. Cotti.—p. 119.
Influenza in Public Hospital. M. E. Lenoble.—p. 125.
*Muscle Signs of Sciatica. Chiray and E. Roger.—p. 129.

**Anachlorhydria and Apepsia.**—Ramond relates that he found anachlorhydria in 11 per cent. of 340 dyspeptics and apepsia in 0.5 per cent. The anachlorhydria can generally be traced to some infection or intoxication, or to nervous action. Acute carbon monoxid poisoning is sometimes responsible for the anachlorhydria, but alcohol was the most common cause; it was evident in 15 per cent. Hayem incriminates tobacco, but Ramond says that tobacco acts more as a stimulant of gastric secretion. Nervous influences were undoubtedly responsible in certain cases, but they were rare. Melancholia and neurasthenia with a tendency to melancholia were sometimes accompanied by anachlorhydria. Persons with anachlorhydria are small eaters as they thus spare themselves discomfort. For the same reason they avoid meat, fresh bread, beans and peas, wine and coffee. Fatigue and working immediately after meals also induce discomfort. They may also complain of a bitter taste in the mouth on waking, and after meals there is oppression and often nausea with vomiting, sometimes at once or not until late. In nearly 80 per cent. of such patients there is no tendency to dilation or ptosis of the stomach, but rather the reverse, and evacuation is relatively rapid. The anachlorhydria is generally definite or at least of long duration, and it was not modified in his experience by a meat diet or with pig or dog gastric juice or salt, but alkalines often promoted digestion. On a strictly egg, milk and vegetable diet, the symptoms usually disappear.

**Wassermann Reaction with Chronic Splenomegaly.**—Summarized on page 1398.

**Leukocyte Balance with Irritable Heart Action.**—Laubry and Esmein state that mononucleosis was evident in twenty-two out of thirty persons with *instabilité cardiaque*. At the same time, there was no relation between the leukocyte formula and the degree of the heart instability or its duration. The leukocyte reactions do not display constancy or fixity enough to be regarded as a fundamental symptom of pathogenic import. In three soldiers with exophthalmic goiter, the leukocyte formula was found normal on three separate examinations.

**Treatment of Dysentery by Appendicostomy.**—Cotti has treated seven cases of acute rebellious dysentery by systematic flushing of the large intestine with a 1:1,000 solution of silver nitrate introduced through the appendix. The appendicostomy was done under spinal anesthesia. The usual measures had all been tried before to no avail. The dysentery seemed to be of the Shiga type and two of the men succumbed to the profuse hemorrhages which persisted after the intervention or to the progressive severe ulcerations.

**Muscle Signs of Sciatica.**—Chiray and Roger call attention to the *signe de la pointe*, that is, the inability, with sciatica, to stand on tiptoe. The insufficiency of any one of the three groups of muscles involved prevents assuming or at least holding the tiptoe position. (See also, page 1497, a summary of their previous communication on this subject.)

## Journal de Médecine de Bordeaux

March 10, 1919, **90**, No. 5

*Intrapulmonary Serotherapy for Pneumonia. P. Mauriac.—p. 87.
Splenectomy for War Wounds of Spleen; Three Cases. Drouin.—p. 91.
Impressions on Medical Mission to Russia. P. Pietri.—p. 96.

**Intrapulmonary Injections in Pneumonia.**—Mauriac has only eighteen cases to report and three of the patients died, but in the others the exceptionally grave influenzal pneumonia seemed to have benefited remarkably by the injection directly into the lung tissue of antipneumococcus serum. The lung tissue seemed to bear the injection well. In only half the patients was there even coughing. It is better to withdraw the needle if the coughing is violent; this lesson was taught by one case in which the jerking around of the needle during coughing was followed by a minute hemorrhage. He used a 20 c.c. syringe with a needle 10 or 12 cm. long, pushed gently directly into the lung tissue at the focus of the pneumonia, thus injecting 20 c.c.

## Le Nourrisson, Paris

March, 1919, **7**, No. 2

*Infirmary for Infants. H. Méry.—p. 65.
*Habitual Vomiting in Infants. A. B. Marfan.—p. 76.
Study of the Blood and Blood-Producing Organs in Infants. G. L. Hallez.—p. 102.

**Infant Infirmary.**—Méry reviews the experiences of the last three years at the Médan infirmary which receives infants under 2 suffering from gastro-intestinal derangement. The absolute necessity of breast milk for young infants is emphasized anew by the data presented. After the fifth month they can get along without it, and Méry protests against infants younger than this being sent to the infirmary, as breast milk is not available there. Especially gratifying have been the results of placing infants in families, particularly those taken from homes where there is tuberculosis.

**Vomiting in Infants.**—Marfan calls the vomiting in the absence of any primary lesion in the stomach, the "disease of habitual vomiting in nurslings." It is evidently a nervous trouble; the gastric mucosa is unduly sensitive, and after each feeding there is a gastro-spasm and the stomach casts up more or less of its contents, breast milk or artificial food, as the case may be. It is a gastric neurosis, which explains the variability of the findings in the chemistry of the stomach and of the stools. If the spasms include the bowel there is constipation. Excessive swallowing of air may complicate the clinical picture. Infants inclined to habitual vomiting generally display a neuropathic tendency. Sometimes a complete change of environment may prove effectual when all else has failed, although the improvement may be only temporary. In other cases, treatment as for inherited syphilis gave sometimes surprising results. The vomit in these cases is usually a colorless fluid, made up of the whey of the milk, swallowed saliva and gastric juice, with floating clots of milk, as the vomiting does not occur at once, not until after fifteen or thirty minutes or an hour or an hour and a half or more after the feeding. The vomiting may occur without effort, or the child may be restless and scream and appear relieved after the vomiting. Sometimes abruptly moving the child may bring it on.

## Paris Médical

March 29, 1919, **9**, No. 13

Therapeutics and Manufacturing Chemists. P. Carnot.—p. 245.
Slipping Up of the Patella. P. Descomps and others.—p. 255.
Simple Device to Correct Fracture of the Clavicle. L. Senlecq. —p. 257.

April 5, 1919, **9**, No. 14

*The Arsphenamin Question. G. Milian.—p. 261.
*Technic for the Seroreaction in Syphilis. H. Eschbach and E. Duhot. —p. 270.
*Nature of the Seroreaction in Syphilis. M. Rubinstein.—p. 274.
*Modifications of the Seroreaction in Syphilis. P. Comte.—p. 279.
Prophylaxis After the War. Carle.—p. 282.
*Syphilis of the Stomach. Azémar and Lacapère.—p. 287.
Recent Literature on Syphilis. G. Milian and Burnier.

**The Arsphenamin Question.**—Milian discusses the disturbances which may follow the use of arsphenamin, especially what he calls *la crise nitritoide* and *l'apoplexie séreuse*. He says that they are both due to the vaso-dilating action of the drug, and epinephrin prevents and cures them. When the drug has not been rendered sufficiently alkaline, it is almost certain to induce congestive phenomena. Neoarsphenamin never induces the nitritoid crises except in extremely

predisposed and intolerant persons. By watching for signs of intolerance under graduated treatment, it is possible to guide the doses so as to avoid them. Headache, vomiting, or diarrhea, coming on a few hours after the injection or the next day are gross signs of lack of tolerance. Headache, however, may be merely from a Herxheimer or other reaction and not from the toxic action of the drug, but as it is impossible to distinguish between them, it is better to err on the safe side and not increase the dose unless mercury corrects the tendency in the interval. Lacrimation, watery nasal discharge, excessive secretion of saliva and increase in the size of the testicle are minor signs warning of the impending nitritoid crisis or serous apoplexy, but the most certain and safest guide is the temperature, taken every three hours, the day of the injection. If the temperature goes above 38 C. (100.4 F.) there is marked intolerance. If this occurs with each injection, with the same dose, it might be preferable to drop this drug. A temperature between 37.8 and 38.2 C. the second and third days also testifies to intolerance, and calls for extreme prudence. Epinephrin given promptly at this time will ward off serous apoplexy. Milian remarks that the patients display an incredible carelessness to this important point of recording the temperature every three hours. It is an extremely reliable guide, and its warnings should never be disregarded. The only fatality Milian had from arsphenamin at the center in his charge during the war was of a man whose temperature of 39.5 C., two days after his sixth dose of 0.9 gm. arsphenamin, was ascribed by the attendant to influenza, and Milian was not notified until thirty-six hours later, when fatal coma was already installed. He is confident that if he had taken the proper measures at the critical forty-eight and seventy-two hours, this death might have been avoided. This has been his constant experience in other cases.

He expatiates further on the imperative necessity of making the injection very slowly. By taking ten minutes for it, the injection can be suspended any moment if immediate accidents develop. The syringe is responsible for certain fatalities that might have been avoided by pouring instead of squirting the fluid into the vein. He knows of one man who died on the table from an ultraviolent nitritoid crisis as soon as the concentrated solution of neoarsphenamin had been injected from the syringe. The syringe had also been used in a recent medicolegal case in which the woman died in the physician's office. The syringe is more convenient for the physician, but the patient loses in safety. He suggests further that it is a good plan to adopt the antianaphylaxis precaution of injecting a minute amount such as 1 c.c., and then waiting for fifteen seconds, then inject the same small amount and again repeat this, before allowing the whole amount to enter the vein. This should be the rule for the first injection at least. He does not approve of the practice of giving epinephrin systematically in every case before giving the arsphenamin. He says that this is like the ostrich hiding its head in the sand so it will not see danger. It deprives the physician of the guide as to the tolerance of the patient. There is danger then of unwittingly giving too large a dose. By heeding all these points, Milian exclaims in conclusion, the physician can give arsphenamin effectually and safely. Any neglect of any of them is liable to have fatal consequences.

**The Serodiagnosis of Syphilis.**—This entire number of the *Paris Médical* is devoted to syphilis, and there are several articles on the technic and nature of serodiagnosis.

**Gastric Syphilis.**—Azémar reports three cases in which a course of mercury and arsphenamin was tentatively instituted as a last resort before operating for supposed malignant disease of the stomach. Under this treatment the pain, tumor and cachexia promptly disappeared under the arsphenamin; more slowly under the mercury. There had evidently been gummatous infiltration of the wall of the stomach.

## Presse Médicale, Paris

April 3, 1919, **27**, No. 19

Influenzal Purulent Pleurisy. L. Bérard and C. Dunet.—p. 169.
*Migraine. P. Pagniez, P. Vallery-Radot and A. Nast.—p. 172.
Inter-Crico-Thyroid Intratracheal Injections. R. Rendu.—p. 174.

**Treatment of Purulent Pleurisy.**—Bérard and Dunet give an illustrated description of their method of draining at the very lowest point in the side, toward the front, with a counter-opening at the back through which the cavity is flushed out occasionally. Two Carrel tubes are inserted in this posterior opening, the ends of the tubes brought up high on the back and held in place with a strip of plaster. The patient is got out of bed early, not later than three or five days after the intervention. In 26 cases of post-influenzal purulent pleurisy, 5 of the patients died before this treatment could be fully applied. The others recovered, and in half the time required for recovery with other methods of treating empyema of the great cavity. In 5 cases the pneumococcus alone and in 10 plus the staphylococcus was involved; in 4 the pneumococcus and streptococcus, and in 2 the latter alone. They begin with an evacuating pleurotomy; then the anterolateral drainage is installed, and then the solid pus, which has accumulated like actual false membranes, is swabbed out. It is these accumulations which keep up the trouble; he swabs them out with a sponge or wick on a long forceps, working from the back forward, concluding by introducing the Carrel tubes from the rear. The drainage and the flushing out of the cavity with some antiseptic every three hours during the day should be carefully supervised. The patient should be left in peace the first twenty-four hours after the intervention; he should be quite cured in one month. Similar cases given treatment by other technics took sixty or seventy days before the cure was complete.

**Prevention of Migraine.**—Pagniez and his co-workers, three years ago, reported a case of severe recurring urticaria of alimentary origin which they cured by having the subject eat a small amount of the toxic substance in question one hour before the meal. This practical application of the laws of anaphylaxis proved completely successful in this and several similar cases, showing that the first case was not an exceptional instance. The same reasoning and treatment was applied to migraine, and it has proved remarkably effectual in the five cases here described. The five men and women had been subject to migraine for years, rebellious to all measures. Then one took 0.50 gm. of peptone half an hour before the two principal meals for two weeks, and was free from migraine during that period and for six days after its suspension. Then he had an attack, and resumed the peptone for five weeks and had no further attacks during this period or afterward for six months except a slight headache every ten or fifteen days. At the end of the six months the migraine returned every day, moderately intense. The peptone was resumed for three weeks, and there was no further migraine for nearly two years.

The man's life was completely transformed by the success of this treatment which had not only freed him from the distressing and incapacitating migraine but the functioning of the digestive tract had been transformed as well, losing his flatulence, drowsiness after meals and distress after eating meat and eggs. This patient was a man of 34 who had been subject since the age of 10 to "sick headaches" twice a week, with intense migraine about every six weeks. All the five patients seem to have been definitely freed by the courses of peptone from their tendency to migraine. Other cases of migraine were not modified in the least by the use of peptone. By examining for what Widal calls the *crise hémoplasique* we may be able to distinguish the cases in which this peptone treatment will succeed. It is based of course on Besredka's method now commonly used in serotherapy for warding off anaphylaxis by a small preliminary injection of the antiserum. Its success in certain cases of migraine seems to rank this malady as an alimentary anaphylaxis.

April 7, 1919, **27**, No. 20

*Plasma Therapy in Influenza. E. Lesné, P. Brodin and F. Saint-Girons.—p. 181.
*Hernia of the Colon. G. Labat.—p. 182.
*Minor Signs of Aerophagia. G. Leven.—p. 184.

**Intravenous Injection of Human Plasma.**—Lesné and his co-workers state that citrated plasma is less toxic than

serum, and it can be injected by the vein in large amounts without injury. In their experiments on animals even plasma from animals of other species could be utilized. They applied this method to 14 influenza patients and to 3 with typhoid, injecting convalescents' plasma. Normal serum was used for 8 other patients, and 22 persons were injected with their own plasma. The effects were the same with the plasmas of different origins, testifying that they act as a foreign albumin, eliciting a lively reaction in pathologic conditions but not in the healthy. This lively reaction can be induced by any substance which has the properties of an antigen, that is, any protein foreign to the normal humoral medium. Nolf has announced that even pure water injected fast enough can act as an antigen by manufacturing foreign albumins in situ at the expense of the subject's own albumins. Of all the substances that can be used for an antigen, the autoplasma offers perhaps the most advantages while it does not induce anaphylaxis.

**Hernia of the Colon.**—Labat gives ten illustrations to show how a large inguinoscrotal hernia of the colon can be reduced and corrected by a simple maneuver.

**Aerophagia.**—Leven insists that clinicians fail to realize the importance of aerophagia in its effects on the stomach, heart and intestines as well as on the circulation and the respiration. When a person has complained for years of different dyspeptic troubles and yet his tongue and lips are red and moist and shiny, this testifies to profuse salivation. Inquiry elicits that the pillow is sometimes moistened with saliva at night. This sialorrhea is a sign of aerophagia; the saliva is being constantly swallowed, and this fatigues and irritates the laryngeal region so that such persons like to wear loose collars. The sialorrhea, the sensitiveness of the neck, and the fact that the subject cannot sleep comfortably on the left side are all signs of aerophagia, besides the actual swallowing of saliva and air, usually done unconsciously, the chin drawn down on the chest. The swallowed air may be belched up or passed off by the intestines.

April 10, 1919, **27**, No. 21

*Uremia in Infectious Jaundice. P. Ameuille.—p. 189.
Oculocardiac Reflex with Lesions of Pneumogastric. G. Picot.—p. 191.
Epidermic Cysts. G. Métivet.—p. 192.
Regional Anesthesia for Operations on Stomach. P. Sourdat.—p. 193.

**Azotemia and Azoturia in Infectious Jaundice.**—Ameuille comments on the azotemia and azoturia which are pronounced and common with infectious jaundice, even before the jaundice has become apparent. The urea corresponding to the food is supplemented by the pathologic urea. When the diuresis is abundant and the azotemia low, the prognosis is favorable; oliguria and uremia lead to a fatal termination. It is important, therefore, to shut down on the intake of nitrogenous substances during the period when the patient is having so much difficulty in eliminating those he is drawing out from his own tissues. But after this period is past, then the intake of albuminoids should be abundant to enable repair of the living tissues depleted by the infectious disease.

## Correspondenz-Blatt für Schweizer Aerzte, Basel

March 29, 1919, **49**, No. 13

*Manifest and Latent Chronic Empyema of the Pleura. R. Schweizer.—p. 385.
*Mortality and Results of Nephrectomy. F. Thellung.—p. 396.
*Ileus from Murphy Button. A. Wettstein.—p. 402.
*Appendicitis in Children. A. Suter.—p. 411.
*Surgery of Hypertrophied Prostate. J. Dübs.—p. 417.

**Latent Chronic Empyema.**—The five articles in this issue of the *Blatt* are by Stierlin's present and former assistants and are dedicated to him on the twentieth anniversary of his assuming charge of the Winterthur public cantonal hospital. Schweizer reviews the literature on chronic empyema, and reports a case in which the latent empyema was unmistakably of from twelve to eighteen years' standing, and had never interfered with the earning capacity. He has found four somewhat similar cases on record, and in none of them was the empyema suspected. In his case the operation was undertaken for caries of the ribs. Iselin is right when he warns that we are too ready with the diagnosis of caries of the ribs, and overlook the primary lesion within. Sometimes the latent empyema may be a necropsy surprise, or an acute exacerbation may first attract attention to it. The operation in these old cases requires resection and removal of the encasing, often calcified, cuirass formed by the hardened pleura, and also removal of hardened lung tissue. In his patient, the pus from the unsuspected bilateral empyema finally worked its way into the subcutaneous connective tissue, but it was a whole year doing this. In Tuffier's case this occurred in the course of a few days. In Sweet's case, epigastric pain and vomiting accompanied it. In Schweizer's case, the lung expansion returned to approximately normal after the second operation. The earning capacity was regained, but a further minor operation is now contemplated. In conclusion he warns that even if the empyema lies latent for a decade or more, it is still dangerous; the dangerous consequences are only postponed.

**Nephrectomy.**—Thellung reports a case of fatal paralytic ileus following removal of a tuberculous kidney in a man of 43. The conditions otherwise were favorable, except that the kidney was drawn up high against the spine, and 165 c.c. of ether had to be used. Of the 42 nephrectomies of the last twenty years 6 of the patients died from shock or heart weakness or a necrotic process in the bowel. The mortality has dropped from 30 or 40 to from 3 to 10 per cent. in the two decades. In 16 of the 22 cases of tuberculous kidneys the cure was complete. All those with even very slight tuberculous processes in the other kidney died. When the second kidney is affected, nephrectomy should not be considered except one's hand is forced for a palliative operation. None of the 42 nephrectomized patients succumbed to uremia, thanks to the information derived from catheterization of both ureters and the indigo carmin and phlorizin tests and urea determination.

**Ileus from Murphy Button.**—Wettstein's three cases combined the three possible drawbacks of the Murphy button used at the gastro-enterostomy: failure to drop out, falling into the stomach, and causing disturbance on its way through the bowel. A laparotomy was required to dislodge the button after latent periods of forty-five days, seven weeks, and over four years, respectively. He cites similar cases from the literature, and remarks that as his three cases occurred in a close series the trouble was probably due to defective buttons. Kocher's main objection to the Murphy button was that it leaves us too much at the mercy of the manufacturer. The buttons were found impacted in the bowel 25 and 35 cm. above the valve of Bauhin, and considerable force was required to dislodge them. Wettstein has abandoned the use of the button since these experiences except for cases in which every minute counts.

**Appendicitis in Children.**—Suter remarks that blunders in the diagnosis of appendicitis are more common in children than in adults. In five cases described, the symptoms deceptively simulated appendicitis and the child was to be operated on in the morning, but morning showed unmistakable diphtheria or mumps or the operation revealed ileus from a kink or a gravity abscess from spondylitis. In other cases acute catarrhal enteritis or fermentation dyspepsia was responsible for the symptoms. One boy of 12 returned fifteen months after an operation for coxitis, the symptoms indicating return of the hip-joint disease until discovery of a tender resistance above the right Poupart ligament and the operation revealed a gangrenous appendix. Suter operates at once, day or night, if no more than forty-eight hours have elapsed since the first symptoms. If later than this, he waits, unless his hand is forced, three or four months until the tenderness and resistance have disappeared.

**Surgery of the Prostate.**—In 73 cases of hypertrophy and 3 of atrophy of the prostate, radical operative treatment was applied in 75 per cent.; 18 patients succumbed in from four days to ten weeks. Two died from reflex anuria and one from delirium tremens in which possibly the chloroform was a factor. The functional outcome of the operation was perfect in all. The clinical picture in the 3 atrophy cases was identical with that of the hypertrophy cases, the shriveled prostate impeding the voiding of the urine.

## Deutsche medizinische Wochenschrift, Berlin

Jan. 30, 1919, **45**, No. 5

Treatment of Lymphangitis and Lymphadenitis with Septic General Infection. Fessler.—p. 113. Cont'n.
*Nutritional Disturbance with Fat-Rich Breast Milk. E. Slawik.—p. 116.
Mechanical and Surgical Treatment of Acute Stenosis of the Pylorus. Boyksen.—p. 119.
*Bile Peritonitis with Apparently Intact Bile System. E. König. —p. 121.
Diffuse Peritonitis as Complication of Cicatricial Stricture of Jejunum. V. Lazarevic.—p. 123.
Wound Diphtheria. M. Jacobsohn.—p. 124.
Flaring Up of Hitherto Latent Malaria after Removal of Small Projectile. Siegfried.—p. 125.
Malaria in Asia Minor. H. Flebbe.—p. 126.
Cholera. E. Martini.—p. 128.
Visceral Analgesia in Tabetics. A. Hauser.—p. 129.
The Three Psychic Roots of Hysteria. Levy-Suhl.—p. 130.
*Suggestion and Hypnosis in Practice. Bonne.—p. 132.
Improvised Orthopedic Aids. E. Duschak.—p. 133.

**Abnormal Fat Content of Breast Milk.**—Slawik writes from Prague to comment on the disturbances he has noticed in infants getting breast milk with too high fat content. Innumerable tests of breast milk at the clinic have shown that certain women continuously yield milk that has either far above or far below the normal proportion of fat, and the nurslings suffer from this. With over-fat milk, vomiting occurs early and keeps up. After almost every feeding the infant vomits at once a considerable amount, although there is nothing to suggest pylorospasm or overfeeding. The infants lose their appetite for the breast milk and take only small amounts; they grow pale and drowsy, with flabby muscles. There may be obstinate constipation, or the stools may be thin and odorless, becoming later rancid and thicker. The disturbances differ from those with inability to digest fat. In treatment it may be sufficient to add some fat-poor food to reduce the proportion of fat within normal range.

**Acute Occlusion of the Pylorus.**—In Boyksen's two cases the pylorus had become suddenly occluded on account of some dietetic indiscretion or from complete closure of a previous partial stenosis. In both, the cardia had become closed by a kind of valve formation, and fermentation in the stomach had caused extreme dilatation compelling a laparotomy without delay. No hope from conservative measures is possible in such a case, although this is promising with arteriomesenteric occlusion of the duodenum when the pylorus region is free from anatomic changes. With anatomic changes, delay is dangerous. Strength is lost so rapidly that the case may become inoperable in twelve hours. The success in these two cases was due to the promptness with which the laparotomy was done. If the stomach contents are vomited, the stomach may be empty and small.

**Bile Peritonitis Without Perforation of Biliary Apparatus.**—König adds three additional cases to those on record in which a free accumulation of bile in the abdominal cavity could not be explained by perforation of the biliary apparatus. No perforation could be detected in the gallbladder even after its removal. The bile was evidently derived from diapedesis. One of his patients has had no sign of trouble during the year since the adenocarcinoma in the gallbladder was removed. In the two other cases there was chronic cholecystitis with gallstones.

**Prophylaxis of Cholera.**—Martini discusses the danger of cholera being brought into Germany from Russia and Poland, saying that all that is necessary is to continue the measures which have proved so efficient in the past.

**Suggestion and Hypnosis in General Practice.**—Bonne insists that we do not make enough use of suggestion in the treatment of neuralgia, inoperable cases of cancers, etc., and in the training and disciplining of young soldiers. Especially valuable is suggestion in the treatment of insomnia. Bonne tells the patient "You have forgotten the natural art of going to sleep," and tells him to undress slowly, laying off his cares with each garment, and then resting quietly in bed, making no effort to go to sleep but avoiding all effort and simply resting comfortably. The physician is often surprised himself to realize the power of the suggestion he conveys.

## Annali d'Igiene, Rome

Feb. 28, 1919, **29**, No. 2

The Drinking Water on the Asiago Plain. V. Puntoni.—p. 65.
Immunity of Dogs to Icterohemorrhagic Spirochetosis. L. Sani. —p. 76.

## Gazzetta degli Ospedali e delle Cliniche, Milan

March 30, 1919, **40**, No. 26

Serotherapy of Bacillary Dysentery. L. Nelli.—p. 220.

## Policlinico, Rome

March 16, 1919, **26**, No. 11

Technic for Thoracocentesis and Artificial Pneumothorax After Wounds of the Lung. E. Giordano.—p. 321.
Protection of Motherhood. T. Rossi-Doria—p. 332.
Surgery of the Skull. V. Salvo.—p. 334.

March, 1919, **26**, Medical Section No. 3

Filtrability of Influenza Virus. C. Moreschi.—p. 97.
Determination of Immunizing Power of Antitetanus Serum by Means of Strychnin. G. Tizzoni and P. Perrucci—p. 109.
*Intermittent Chyluria with Malaria. G. Quarelli.—p. 121.

**Intermittent Chyluria in Malaria.**—In the case reported by Quarelli the malaria was of the estivo-autumnal type, and during the febrile paroxysms the man noticed that his urine became milky and persisted thus for ten or twelve hours afterward. The discovery of chyluria should suggest possibly latent malaria.

## Riforma Medica, Naples

April 5, 1919, **35**, No. 14

Gastro-Enterostomy for Cancer of the Pylorus. A. Ajello.—p. 270.
*Correction of Errors of Ureter Catheterization. E. Pirondini.—p. 275.
Record of Arterial Tension. G. Molinari.—p. 275.
Recent Literature on Adiposis Dolorosa. E. Aievoli.—p. 277.
*The Granular Form of Tubercle Bacilli. A. Ferrannini.—p. 282.
*The Oculocardiac Reflex. A. Ferrannini.—p. 283.

**Correction of Error with Catheterization of the Ureter.**—Pirondini refers to the error induced by the escaping of urine between the catheter and the wall of the ureter. It is easy to correct this error when the urine in the bladder shows a concentration of urea like that in one of the kidneys, by comparing the bladder urine with that from the ureter catheter. It is possible to correct the error even when the urine is thus escaping bilaterally between the ureter catheter and the walls of the ureter. He gives an algebraic formula for this which, he says, permits the correction in a very simple manner.

**Granular Form of Tubercle Bacillus.**—Ferrannini relates that Mircoli of Genoa described in 1900 the granular form of the tubercle bacillus which is generally credited to Much, although the latter's publications date from five years later.

**Oculocardiac Reflex.**—Ferrannini does not want it forgotten that Dagnini of Bologna was the first to call attention to the oculocardiac reflex, at a meeting of the local medical society, June 17, 1908.

## Rivista di Clinica Pediatrica, Florence

March, 1919, **17**, No. 3

*Boveri Test of Spinal Fluid. A. Bardisian.—p. 113.

**Color Reaction in Pathologic Spinal Fluid.**—Bardisian tabulates the findings with the Boveri test applied to 50 young children. They were constantly positive with the 13 with meningitis; in 2 of the 5 with hydrocephalus; constantly negative in the 12 with gastro-intestinal or lung lesions; positive in 1 with tetanus, but negative in the 9 others with acute infectious diseases, and constantly negative in the 9 with nephritis, inherited syphilis or other disease. The test is applied with a test-tube containing 1 c.c. of the cerebrospinal fluid. The tube is held slanting, and 1 c.c. of 0.1 per thousand solution of potassium permanganate is poured down the wall of the tube. The tube is then straightened and the zone of contact watched. With normal fluid there is no change of tint, but with pathologic fluid the zone of contact turns yellow. On giving the tube a few gentle shakes to mix the fluids, the yellow tint may spread through-

out. If the reaction is strong, it occurs in less than two minutes; a medium reaction takes three or four minutes, and after the fifth or sixth minute the reaction has no significance. The response is more sensitive than the Nonne, Apelt, and Noguchi reactions. The most intense reactions were observed in cases of meningitis. He describes four cases in detail in which the diagnosis of meningitis seemed certain, but the negative Boveri turned the scale to exclude meningitis; its findings were confirmed by the course of the cases.

## Amazonas Medico, Manaos

June, 1918, **1**, No. 2

Blunder in Diagnosis: Fetus in Pouch of Douglas from Tubal Pregnancy. J. de Moraes.—p. 1.
*Colored Urines. F. Vidal.—p. 4.
*Intestinal Schistosomiasis. A. da Matta.—p. 9.
*Leishmaniosis of Skin and Mucosa. A. da Matta.—p. 11.

**Colored Urines.**—A young man in the hospital, on account of chronic nephritis, began to void green urine, and the liver showed signs of congestion. Chemical tests of the urine showed the presence of biliverdin. The patient soon died. Vidal knows of a second similar case, and he reviews the various types of colored urine that may be encountered, white, blue, violet, green, red or black. One man of 46 had been taking 3 gm. of tannin daily for some time, and his urine turned black under the action of oxygen. The sweat may also be of abnormal color. A case has recently been recorded at Bahia which presented typical polychromidrosis.

**Intestinal Schistosomiasis.**—Da Matta publishes what he thinks is the first case of this kind that has been diagnosed in the Amazonas region. Intestinal pains, congestion of the liver, jaundice and alternating constipation and diarrhea were explained by the lateral-spined ova of the schistosomum in the stools. The snails known to be the intermediate hosts of the parasite are common at Manáos. He mentions that Martinez of Porto Rico was the first to demonstrate the occurrence of schistosomiasis in natives of America.

**Leishmaniosis of Skin and Mucosas.**—Da Matta quotes from early writers to the effect that the grave form of leishmaniosis affecting the skin and mucous surfaces was described as early as 1759. The pottery of the Incas shows reproductions of it from before the discovery of America. Certain regions in Peru seem to be the focus of the disease, but in the course of centuries it has spread from Bolivia and Amazonas to Paraguay. Popular synonyms for the disease are, besides oriental sore, uta and espundia, gallico, kjapa, tiac-araña, jaccuya, quecpo and llaga. Da Matta does not discuss the treatment.

December, 1918, **1**, No. 3-4

*Rabies in Northern Brazil. A. Passos.—p. 75.
*Hexamethylenamin by the Vein with Liver-Kidney Spirochetosis. A. da Matta.—p. 81.
Classification of Leishmanioses. A. da Matta.—p. 86.
Prophylaxis of Influenza. G. Ramos, F. de Sá, M. de Pinho, M. Leão and S. B. Nunes.—p. 93.

**Rabies in Northern Brazil.**—Passos reports what he says is the first case of rabies in man that has ever been recognized at Manáos. Rio, Pernambuco, S. Catharina, Rio Grande do Sul, and Belem have each now a Pasteur Institute, and Passos pleads to have one organized for Manáos. He relates that many dogs, cats and other animals developed influenza, but there seemed to be just preceding this an epizootic of rabies among the animals.

**Hexamethylenamin by the Vein in Spirochetosis.**—Da Matta remarks that Inada and Ito's icterohemorrhagic spirochetosis should more properly be called hepato-renal spirochetosis as the disease is essentially an acute and febrile hepatitis-nephritis, which displays a marked tendency to relapses. The first case reported in Brazil was that of Mac Dowell in 1914. Treatment hitherto has been mostly symptomatic, and the drugs have been given by the mouth. The digestive apparatus is so deranged by the disease that drugs by the mouth have little effect. Much better results can be anticipated from drugs given by the vein, and he has found hexamethylenamin extremely useful for the purpose. He dissolves, cold, 1 or 2 gm. to the 20 or 30 c.c. of sterilized water, and infuses this into the blood stream. It liberates formaldehyd at once, and, he says, is a vigorous and powerful disinfectant, destroying the pathogenic germs wherever they may lurk. This is thus a rational method of treatment for angiocholitis, colicystitis, jaundice of malarial, typhoid or spirochete origin, and especially in hepato-renal spirochetosis. He has found it successful in all these conditions. It is the first time, he believes, that this technic has been applied in this last mentioned disease, and he describes in detail one of his cases to demonstrate the efficacy and harmlessness of intravenous injection of this drug. The patient was a man of 57, and the typical picture of the Inada-Ito spirochetosis was combated with caffein, spartein, saline infusion and cupping in the dorso-lumbar region, supplemented with 2 gm. of the hexamethylenamin in 20 c.c. of distilled and sterilized water, injected daily by the vein for four days, then suspended for two or three, and recommenced, to a total of twenty injections. When the output of the urine was practically normal, he gave sodium cacodylate. The man left the hospital quite cured the twenty-fourth day. The hexamethylenamin by the vein always increased the diuresis, and all the symptoms changed for the better. The effect of the drug is seen in the higher content of nitrogen, chlorids, etc., in the urine. He declares that there are no contraindications.

## Anales de la Facultad de Medicina, Montevideo

November and December, 1918, **3**, No. 11-12

Radiology of Pelvic Colon and Rectum. J. T. Case (Chicago).—p. 745.
*Latent Cancer of Lung. A. Ricaldoni.—p. 770.
Dysentery in Uruguay. A. Gaminara.—p. 800.
*Amebic Tumors in Large Intestine. E. P. Lasnier.—p. 810.
Cecropia Peltata in Therapeutics. M. F. Langon.—p. 829.
Epinephrin in Influenza. A. Ricaldoni.—p. 867.

**Latent Cancer of Lung.**—In Ricaldoni's case a man of 65 was an itinerant peddler who had complained for five months of right suprascapular pain. Finally atrophy and paralysis developed in the region innervated by the brachial plexus. There was no dyspnea, no blood in the scanty sputum, and the roentgen and palpation findings were negative. The pains varied, sometimes preventing sleep and again almost disappearing. The man died suddenly one night. An extrameningeal radiculitis seemed most plausible, and its tuberculous nature was suspected. Necropsy confirmed the extrameningeal site of the trouble but showed that it was of malignant nature, a diffuse epithelioma of the lung, with metastases in the pleura and surrounding tissues, presumably secondary. Five illustrations and one colored plate reproduce the histologic findings, especially the sclerosis in the nerve. Analysis of this case and similar ones on record suggests that some of the cases of partial and unilateral paralysis which have been classed as toxic or dyscrasic neuritis, from chronic bronchopneumonia or pulmonary tuberculosis, are in reality the consequence of the spreading of the inflammation to the pleural dome. This mechanism was unmistakable in the present case.

**Amebic Intestinal Tumors.**—Lasnier's illustrated cases demonstrate the possibility of amebic inflammatory tumors in the intestines. He reiterates that this possibility should be borne in mind, and treatment for the amebiasis instituted before considering operative measures. The discovery of the ameba will often confirm the diagnosis as the tumors otherwise are liable to be ascribed to tuberculosis or other causes.

## Annaes Paulistas de Med. e Cir., S. Paulo

December, 1918, **9**, No. 12

*Measures Against Malaria in the Orient. S. T. Darling.—p. 265.
*Hashish Smoking. F. de Assis Iglesias.—p. 274.

**Local Measures Against Malaria.**—Darling emphasizes that the measures for prophylaxis against malaria must necessarily be local, and that they have to vary with local conditions. For example, the drains that last indefinitely in a clayey region would be washed out by the torrential rains in a more sandy soil. He describes the measures that have proved effectual in the Malay States, especially the straightening and deepening of small streams, with underground

drains. He commends the appointment of an antimalaria board to study local conditions. In the Malay States the board includes the chief of the public health service, a civil engineer, a bacteriologist, a member of the cabinet, a physician, and the owner of a large plantation—each one selected for special experience and skill. The training of the children in prophylaxis of malaria is regarded as important, and posters in several languages serve to warn the populace. The constant intelligent care of the drains, etc., is an important part of the work, as also the determination of the local species of mosquitoes that serve in the transmission of malaria, so that prophylactic measures can be focused on this species.

**Hashish Smoking in Brazil.**—Iglesias states that *Cannabis sativa* is cultivated in certain regions in the north of Brazil where it is smoked in a special pipe, the smoke passing through water, or in the form of a cigar. He has been experimenting with laboratory animals placed in conditions like those of these human inhalers of the cannabis smoke. The animals showed signs of toxic action, vomiting, paralysis and torpor, but they were transient; the animals had quite recuperated by the end of two hours. Injection by the vein of some of the water through which the smoke had been passed caused no toxic symptoms in the animals. Iglesias describes some special instances of the cannabis smoking vice to illustrate the apparently inevitable mental derangement which its frequent use entails, the hallucinations liable to lead to crime or suicide. The cannabis smokers often form clubs for smoking in common at first, but when they become addicted to the vice they prefer solitude, and gradually fall into the aspect and manners of idiots. The drug is called mostly diamba in Brazil, hashish in the Orient. Iglesias urges prompt government measures to check this vice.

## Gaceta de los Hospitales, Mexico, D. F.

February, 1919, **2**, No. 1

*The Work of the Congress on Typhus. E. Landa.—p. 1.
*The Problem of the Etiology of Typhus. A. B. Vasconcelos.—p. 12.

**The Problem of the Etiology of Typhus.**—The proceedings of the recent Mexican Congress on Typhus were mentioned in the Mexico Letter in THE JOURNAL, Feb. 8 and 15, pp. 435 and 508. Vasconcelos pleads for the organization of a special institute for experimental research on tabardillo or typhus, or at least to reestablish the prize instituted by the minister of public instruction, D. Justo Sierra, to stimulate research on typhus and reward the discovery of the causal germ. Until this is realized, antityphus serum should be obtained in ample amounts. He specifies Nicolle and Blaizot's antiserum for the purpose as having given the best results to date.

## Gaceta Medica de Caracas

Feb. 28, 1919, **26**, No. 4

Influenza in Venezuela. F. Mendoza and others.—p. 37.

## Medicina Ibera, Madrid

Feb. 22, 1919, **6**, No. 68

Nephritis. S. Pascual.—p. 169. Cont'n.
Diagnosis of Ovarian Cysts. R. B. de Bengoa.—p. 175.

March 8, 1919, **6**, No. 70

Partial Nephrectomy. P. Cifuentes.—p. 209.
*Three Supernumerary Pupils. J. González.—p. 210.
Hyperchlorhydria in Spain. R. M. Terol.—p. 212. Conc'n.
Varices and Syphilids. Sicilia.—p. 217.

**Polyopia.**—González gives illustrations of the right eye of a girl of 11 with three supernumerary pupils. The dilation of the pupil under atropin partly closed these supernumerary openings, and temporarily cured the annoying double polyopia. A permanent cure was realized by iridectomy, thus fusing the larger opening with the natural pupil.

## Revista de la Asoc. Med. Argentina, Buenos Aires

January, 1919, **30**, No. 170

Penetrating Abdominal Wounds. J. C. Ahumada.—p. 5.
Comparative Value of Pirquet and Mantoux Tuberculin Tests. A. Casaubon.—p. 34.
*Memoirs of a Hygienist. E. R. Coni.—p. 55. Conclusion.
Bilateral Vagotomy in Guinea-Pigs. L. Giusti and B. A. Houssay.—p. 165.

**Memoirs of Pioneer in Public Hygiene.**—As mentioned in THE JOURNAL, Sept. 15, 1917, the Argentine Medical Association resolved in 1917 to enter the publishing field to a certain extent, so that the best medical works by Argentine writers would get their chance of publication. The series of books thus to be published by the association are to be known as the Biblioteca Medica Argentina. The first book of the series is the "Memoirs of a Hygienist," by Dr. Emilio R. Coni, who has been a leader in public health matters and hygiene so that his autobiography forms a complete history of public hygiene in Argentina. The work has been published as a serial in the *Revista de la Asociacion Medica Argentina*, and this is its concluding instalment.

## Revista Medica de Yucatan, Merida

Jan. to March, 1918, **11**, No. 6

Pterygium. Pathogenesis, Treatment and Prognosis. R. Sauri.—p. 1.
*Eosinophilic Proctitis. A. Lara N.—p. 2.

**Eosinophilic Proctitis.**—Lara was unable to find amebas or any helminths in 80 per cent. of the stools of young children presenting symptoms of enteritis suggesting dysentery. Scraps of the bleeding mucosa from eighty-seven infants showed a yellow layer of eosinophil cells with granular protoplasm, and numerous Charcot-Robin crystals. The blood count in eleven in this group showed an average of 7 per cent. eosinophils during the acute phase, and of 11 per cent. at defervescence. Necropsy of three of the infants, from 9 to 15 months old, revealed congestion and ecchymotic patches. Along with the dysenteriform enteritis and slight fever, there was sometimes an occasional dry cough, with signs of alimentary autointoxication plus infection, favored by the general depression from teething, the whole presenting a clinical picture like that of eosinophilic proctitis.

## Rev. Sud-Amer. de Endocrinologia, etc., Buenos Aires

March 15, 1919, **2**, No. 3

Influenza in Argentina. S. Dessy, F. Grapiolo and C. Spada.—p. 65.

## Semana Medica, Buenos Aires

Feb. 27, 1919, **26**, No. 9

*Tuberculin Treatment. J. J. Vitón.—p. 205.
Epizootic Meningitis in the Horse. C. F. Flores.—p. 208.
*Progress in Hygiene in Buenos Aires. E. R. Coni.—p. 212.
*Fluorids and Endemic Goiter. L. Goldemberg.—p. 213.
The Coolidge Tube. C. Heuser.—p. 223.

**Tuberculin Treatment.**—Vitón says that every day he grows more enthusiastic over the result of treatment of tuberculosis with "ultra small" doses of tuberculin which give, he says, "ultra gratifying" results. By "ultra small" he means 1 per thousand million (A); 1 per ten thousand million (B); or 1 per hundred thousand million parts (C). The more acute the symptoms, the smaller the dose that should be used. He regards any general reaction as distinctly injurious; the persons particularly liable to respond with a general reaction are those inclined to asthma, the febrile cases, certain dyspeptics, and certain persons with painful rheumatism. He makes these ultra small doses by taking one part of a 1 per ten million dilution and diluting it with nine parts of a ¼ aqueous solution of phenol. He found further that symptoms following a reactive dose of tuberculin subsided under a following ultra small dose of the same tuberculin.

**Progress in Public Health in Buenos Aires.**—Coni's statistics confirm that the progress in sanitation, etc., during the decades since 1858 have reduced the annual death rate per thousand inhabitants from 37.3 to 15.2; in 1917 it was only 13.7. "The second largest Latin city has thus reached a death rate which compares favorably with the large cities of England, supposed to be the healthiest in the world."

**Pathogenesis of Goiter.**—Goldemberg noticed that fluorids seemed to check oxidations by animal oxidases in vitro. Administered to young rabbits in minute, repeated doses, this action was confirmed by the drop in temperature which fol-

lowed each dose. Later there was a hyperthermic reaction which lasted several days. No influence on the thyroid was perceptible. Perhaps larger animals, dogs and goats, might have had the thyroid affected more.

## Siglo Medico, Madrid

March 8, 1919, **66**, No. 3404

*Bone Implants in Treatment of Fractures. J. Bravo.—p. 185.
Influenzal Bronchopneumonia; Treatment with Chemical Catalysis. L. C. Cambon.—p. 189.

**Bone Implants in Treatment of Fractures.**—Bravo adds his testimony to that of others in regard to the advantages of implanting a peg of bone for fracture or pseudarthrosis, taken from the patient's own tibia or fibula. He gives some roentgenograms of a few cases to illustrate the advantages of the method.

March 22, 1919, **66**, No. 3406

Traumatic Pneumonia. S. Pascual.—p. 229.
*Morphin Addiction. C. Juarros.—p. 232.
The Conception of Pretuberculosis. B. Gil.—p. 233. Cont'n.
Introduction to Study of Surgery. J. G. Capdevila.—p. 235. Cont'n.

**Treatment of Morphin Addiction.**—Juarros remarks that morphinomania is becoming every day more and more common in Spain, while there is a lack of adequate institutions for its treatment. He does not approve of sudden withdrawal of the drug, but prepares the patient for it with a course of alkalines to combat the hyperacidity common in morphin addicts. He gives the alkalines in the form of Vichy water to drink or by injection, and sodium bicarbonate in injections. He prefers subcutaneous injection of the Vichy water, increasing gradually from 1 to 100 gm., or a 4 per thousand solution of sodium bicarbonate in isotonic saline. If the patients object to the injections, the alkaline has to be taken as a beverage. The alkaline treatment is merely an adjuvant, but he regards it as a powerful aid.

## Vida Nueva, Havana

January, 1919, **11**, No. 1

Roentgen Verification of Proper Location of Duodenal Tube. P. L. Fariñas y Mayo.—p. 3.
Transvesical Prostatectomy. A. G. Casariego.—p. 7.
Application of Plasmogenesis to Medicine. A. L. Herrera.—p. 12.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 15, 1919, **1**, No. 7

International Standards for Medical Students. G. Van Rijnberk.—p. 501.
*Treatment with Strophanthin in Series. J. Lankhout.—p. 508.
*Fracture of Neck of Femur. J. A. Korteweg.—p. 513.
Rapid Infectious Gangrene of Penis. D. B. Boks.—p. 519.

**Strophanthin Treatment.**—Lankhout found that the irregular heart action and pulse of 160 failed to respond to digitalis in the woman of 40, but marked improvement followed injection of 0.00025 gm. strophanthin. This effect was constantly realized by the strophanthin, and he finally had the woman take this drug systematically over long periods. By this means he kept her cardiovascular apparatus in comparatively good condition. The injections were given with several days' intervals, and no untoward by-effects were observed from the thirty-two injections in this case or the nineteen in a second, similar case of this pulsus irregularis perpetuus.

**Fracture of Neck of Femur.**—Korteweg discusses Noordenbos' method of treating fracture of the neck of the femur by driving a peg through into the head, axial to the neck. He uses a peg cut from the fibula, but this breaks so readily that Korteweg proposes an ivory peg as more suitable. He thinks this method is applicable only for young healthy persons, and after reduction of any invagination.

## Norsk Magazin for Lægevidenskaben, Christiania

February, 1919, **80**, No. 2

*Retention of Chlorids in Uremia with Convulsions. J. Holst.—p. 113.
*Retroperitoneal Sarcoma. P. Bull.—p. 145.
*Isolated Bladder Tuberculosis. E. Platou.—p. 151.
*Nitrogen in Urine and Blood. H. Salvesen.—p. 157.
*Infectious Jaundice. L. Nicolaysen.—p. 170.

**Retention of Chlorids in Uremia with Convulsions.**—Holst reviews the research in various countries which has led to the conception of "chloridemia"—analogous to azotemia—to express the condition resulting from the inability of the kidneys to eliminate chlorids. The clinical manifestations for which the retained chlorids are responsible (according to Widal), include headache, vomiting, respiratory disturbances, convulsions and coma, and possibly the eclamptic equivalents: paralysis, amaurosis and tendency to deafness. This clinical picture is identical with that of eclamptic uremia, but Holst proceeds to show by detailed study of 9 cases of varying types that these manifestations cannot be ascribed to the concentration of the chlorids in the blood serum. When the chlorids are retained, enough water is always retained with them to keep the concentration practically at a constant level. It is the retention of the water necessary for this that causes the trouble, the brain, lungs and viscera becoming edematous. In 2 of the cases presenting the classical picture of chloridemia, the chlorid content in the blood was high, 6.5 or 6.7 per thousand; urea 0.283 or 0.258 per thousand. In 2 other cases with symptoms of pure uremia with convulsions the chlorid content was within normal range: 6.2 and 5.9, with urea 0.36 and 0.25. In another group of 2 the chlorid content of the blood was high, 7 and 6.6, but one had never shown any symptoms of disturbance from retention of urea or chlorids, and always felt subjectively well in spite of his amyloid kidney; the other had apparently sound kidneys and was clinically normal except for slight gastric hyperacidity. Two other patients, one a parturient, exhibited symptoms typical of uremia with convulsions, but the chloridemia of the blood kept low, not over 5.5 and 5.9, although the uremia was so extreme that death soon followed.

It is the secondary retention of water that brings on the clinical picture that has been labeled "chloridemia": the edema in the brain and viscera. Treatment should include abstention from salt, but if the urea in the blood is within normal range, and if the phenolsulphonephthalein test shows normal conditions in this line, then the patient can be given milk in increasing doses, gradually resuming fish and meat, merely keeping the salt intake low. Milk is useful on account of its high albumin content and its low salt content. It may seem strange to allow albumin to these patients with convulsions from retention, but, once certain that the blood shows the nitrogen metabolism intact, there is no need to spare it. Holst's clinical success confirms the correctness of his premises.

**Retroperitoneal Sarcoma.**—Bull's case is remarkable not only in the huge size of the myxofibrochondro-sarcoma but in the smooth recovery after its removal. The first symptoms had been slight abdominal pains, ten years before; the tumor became palpable the sixth year. It weighed 15.5 kg., over 34 pounds, after removal. The patient was a machinist, 54 years old.

**Isolated Tuberculosis of the Bladder.**—Platou relates that there have been sent in for examination, in the last two years, five kidneys removed on account of tuberculosis which proved to be even microscopically free from tuberculosis. The patients' symptoms had indicated tuberculous disease in one kidney and in the bladder, with tubercle bacilli in the urine. Two of the patients seemed to be cured by the nephrectomy; two others died from the progressive bladder tuberculosis; the outcome is not known in the fifth case.

**Colorimeter Determination of Nitrogen in Blood and Urine.**—Salvesen's research amply confirms the reliability and simplicity of the Folin-Denis methods for determining the total nitrogen, ammonia and urea in the urine, and the non-protein nitrogen in the blood. He considers them superior to other technic, especially for the urine. The reaction is the change in tint after addition of Nessler's reagent. This is prepared with mercuric iodid and potassium iodid with addition of sodium hydroxid.

**Infectious Jaundice.**—Nicolaysen remarks that epidemic catarrhal infectious jaundice is comparatively common in Norway, but it seems improbable that it has anything to do with spirochetes or Weil's disease.